# NEW-YORK FARMER,
AND
# *Horticultural Repository.*

VOL. I.] NEW-YORK, FEBRUARY, 1828. [NO. 2.


[For the New-York Farmer and Horticultural Repository.]

**ART. 27.**—*On the improvement of Pastures. By* J. BUEL, ESQ. *of Albany.*

I shall consider them under the two following heads:

1. Those in which the plough is altogether excluded, which may be called *permanent pastures*; and,

2. Those which intervene in alternate husbandry, and which may be denominated *temporary.*

The first comprises lands which are too stony, too wet, or too hilly, for tillage, and sometimes river alluvians. The latter are less frequently depastured here than in Great Britain. *There* they are considered necessary to *fatten*, while the hilly uplands are appropriated to *rear* and to *feed* neat cattle. Their superior value with us for hay, in situations accessible to large towns, has generally confined pasturage upon them to the aftermath.

The object in attempting to improve pasture grounds, is to increase the quantity of nutritious herbage, and to obtain a constant succession during the season, for the production of meat and milk. The artificial means of effecting this, are, a judicious selection of grass seeds, manuring, draining, keeping the ground in order, and the extirpation of useless and injurious plants.

1. The advantages of old pasture grounds are very highly valued in Great Britain. They contain a greater variety of grasses, and yield a much greater quantity of food, than those which have been recently laid down. The feed is believed to be also more nutritious, as the sod is found to abound in the finer native grasses, which, on account of the little product they yield in hay, are not so commonly sown as those which afford bulkier products. Grasses do not all grow alike; some start early and afford a good bite in spring; some are more luxuriant at midsummer; and others again afford nutritious herbage in autumn and winter. Old pastures contain more or less of each, and consequently give a succession of fresh feed. They are truly perennial. Their value, other circumstances being similar, is in proportion to their fertility; for vegetables, like animals, require food for their developement and perfection, and thrive in proportion as this is abundant and nutritious.

When pasture grounds are wet, the first object should be to drain them thoroughly. *Wet* grounds produce coarse grasses, which smother the finer kinds, and become poached by the feet of cattle till the sod is partially or wholly destroyed. *Moist* grounds on the contrary, produce the greatest variety and most nutritious quality of grasses.

The extirpation of bushes, thistles, dock and other useless plants, although but seldom or partially attended to, will well repay the labor in the increased quantity of feed, to say nothing of the appearance of neatness which it gives to grounds. By this I do not mean to exclude trees, either single, in clumps, or in belts upon the borders. These afford shade, shelter, and fuel, without materially injuring the pasture. Where the common locust is exempt from the depredations of the worm, it may be raised in this way with great profit. I have been much pleased with the attention which has been paid to this subject in Pennsylvania, and in the southern parts of this state. Belts of forest trees are peculiarly serviceable in protecting winter crops from the severity of cold.

Manuring pasture grounds, otherwise than by the droppings of cattle that are fed upon them, is a practice that has few or no followers among us; and yet it might be done with as much advantage here as in other countries. But for this purpose, I would not recommend cattle dung, but road alluvian, swamp earth, and composts. The best and cheapest top-dressing for pastures as well as meadows that I am acquainted with, with the exception of plaster of Paris, is what the Scotch call middens, or Lord Meadowbanks' compost middens. It is composed of about three parts swamp earth, and one part fresh stable dung, placed in compact alternate layers, to the height of four or five feet, and suffered to remain until insipient fermentation pervades the mass. The swamp earth I speak of, is the black vegetable matter which has accumulated in bogs and wet grounds, and which is often insoluble, and unfit for the food of plants, until decomposition has been begun by the aid of hot dung, lime, or other extraneous agent. I have made this compost with success, and applied it with profit. It is a cheap method, when the materials are at hand, of trebling or quadrupling manure, for all the purposes of husbandry. It should be applied to grass grounds in autumn.

Scarifying or harrowing pastures in the spring, which are what is termed hide-bound, is a good remedy for the evil, and serves to extirpate masses, which are the bane of the finer grasses. Seeds may be scattered previous to this operation with certain advantage. Heavy rollers are also used with benefit, as early as the sole of the grass is solid enough to sustain the weight of cattle. It reduces inequalities occasioned

by frost, and presses the earth to the collar and roots of the plants.

2. In preparing new pastures, the rule should be, to endeavor as far as possible, to make them resemble old ones. And this is best effected by sowing seed of all the esteemed varieties found in old pastures. On this head our practice is very defective; two kinds being the greatest extent to which our experiments have been carried. I have read some interesting experiments made at Woburn by Sinclair, on this subject; but as the book is in the hands of a friend, I can only quote from recollection. This indefatigable experimenter counted the number of plants upon a given surface of rich old pasture, and upon a like surface of new pastures, sown with from two to ten or a dozen kinds of grass seeds. The old sod supported about 11,000 plants; on the new the number varied, I think, from about 700 to 75, and was found to be nearly in the ratio of the number of grass seeds sown. The weight of the produce cut at the proper season, corresponded somewhat with the number of plants. The deductions from these facts, were, that by sowing a great number of kinds, and an abundance of seed, new pastures might in two years acquire nearly the value of old ones: for though a given space would grow but a certain number of *one* variety, yet that the same space would support more than double that number of *several* varieties: and that consequently, *many* would afford much more forage than *one* or *two* varieties on the same surface.

These deductions correspond with the established maxims of natural philosophy. All plants take from the soil food which benefits all; yet every species requires for its developement and perfection, something peculiar which other species do not imbibe. And although the soil contains only enough of this peculiar nutriment to support a certain number of plants of one species, yet it may abound in the peculiar nutriment of others. But I need not resort to abstruse science to illustrate what is apparent to every intelligent farmer. Our system of rotation of crops is based upon this law of nature; and we see it confirmed in the alternations which are constantly going on in our fields and forests.

Our seed shops do not afford any great range in the selection of grass seeds. But we are better off than we have been; and if farmers consult their true interests, we shall soon find new varieties imported, and more care bestowed in collecting the seeds of valuable indigenous kinds. At present we can obtain seeds of the tall oat grass, (*Avena elatior*,) the orchard grass (*Dactylis glomerata*,) timothy (*Phleum pratense*,) herdsgrass (*Agrostis stricta*,) and white and red clovers (*Trifolium pratense* and *T. repens*.) These are all suitable for pasture grasses. The Poa pratensis, P. trivialis, P. compressa, (rough and smooth stalked meadow, and blue grasses,) the Agrostis alba, (white top or foul meadow,) the Holcus lanatus, (meadow soft grass) some of the Festucas and several of the Agrostis families, are indigenous, and come in spontaneously, on soils adapted to their growth. The seeds of meadow foxtail, sweet scented vernal grass, rye grass, and tall fescue, may be obtained from Great Britain, and would be valuable accessions to our pasture grounds.

*Albany Nursery, Jan.* 24.

---

**ART. 28.**—*On the improvement and management of Soils, and on the means of bringing and retaining them in a state of fertility. By* WILLIAM WILSON. *Read before the New-York Horticultural Society, March* 26, 1822.

Perhaps there is no subject of greater importance to the horticulturist, than a right understanding of those principles on which the fertility of soils depends. In many excellent treatises on manures, we find considerable lists of various substances, all calculated to support the productiveness of the soil; and experience has long proved the necessity of some return being made to those soils which are kept under constant cultivation. The quantity of this return, or as it is generally termed, manure, that is requisite to continue the soil in a productive state, varies in different soils; and those kinds which continue the longest productive with the least additional supply, are justly styled the richest or best. Experience has also proved that such soils are those which contain moderate proportions of all the elementary constituents of soils, which are but few and generally found combined with the clayey, sandy, and vegetable earths. Nothing, therefore, appears more evident than the propriety of assimilating as much as possible a regular intermixture of these ingredients. When the upper surface is very sandy, the most excellent layers of clay or marl, are frequently found at no great depth below, thirty or forty cart loads of which, dug and spread upon the surface of each acre, will form a most effective and permanent improvement. On the other hand, clayey soils are improved by the application of sand gravel and exposure to winter frosts. Vegetable or peaty soils frequently rest on beds of clay, which, when burnt and intermixed, form a good soil. These modes of improvement, where practicable, are the most proper, and although perhaps in the first instance attended with considerable expense, cannot fail ultimately to prove the most beneficial. Before we proceed to the consideration of the application of particular substances, as manures, it may not be improper to take a view of the natural state of vegetation in those vast tracts where every operation necessary to perpetuate a never failing produce, invariably takes place without the aid of the hand of man. By art and industry, the augmentation and improvement of vegetable productions are truly great—yet, whenever we exceed

the limits of natural laws, some equivalent redress must be substituted, or our pursuits will soon terminate in the entire destruction of that subject on which we impose. It is impossible to survey the uncultivated wilderness without admiring the wonderful energies that must there be retained in the soil. The majestic pine, the stately oak, with the great variety of other inhabitants of the forest, seem to mock the idea of receiving aid from the hand of man; and when the stately productions are removed by the hardy woodman, instead of finding the soil exhausted, it is generally found replete with every nutritive principle. The means by which the soil is here capable of supporting vegetation are extremely obvious; every material ingredient extracted by the vegetable products are again faithfully returned by the constant descent of leaves, and limbs; and even trunks and roots every where intermingle their mouldering elements, where succeeding products ascend with renovated vigor and stand monuments of exalted verdure; while the various animal inhabitants that consume so much of the produce as is necessary for their support, transmit continual returns by their excrementitious discharges, and the natural dissolution of their own carcasses. These are entertaining and interesting facts to all those who cultivate the soil, and exhibit incontrovertible rules by which all their proceedings ought to be influenced. The analytical investigations of chemical philosophers all terminate in corroborating the wisdom of the laws of nature; and vegetable and animal substances being the principal ingredients which are regularly added to and intermixed with the soil in the state of nature, we are at once directed in our artificial improvements to liberal applications of these substances to such soils as are devoted to the continual productions of superior or extraordinary crops. In highly cultivated grounds, the supply of these substances becomes eminently necessary from two causes. The soil is constantly charged with the greatest possible quantity of vegetable products, and as soon as they arrive at maturity, are entirely carried off the soil for the purpose of being applied as sustenance for man and beast. There is no soil, however rich or fertile by nature, that could long support a treatment of this kind without a reasonable return of manure of vegetable or animal origin. It is true, there are substances also of mineral or fossil origin, that operate to great advantage on certain kinds of soil, and at least lessen the necessity of applying such quantities of the other kind of manure. We shall offer a few observations on the most important of these manures. From the whole tenor of the preceding part of this essay, it will be easy to perceive the great importance of those manures which are derived from animal and vegetable substances. It is also a well known fact, that of all others, the dung and urine of domesticated animals are of the greatest importance.

It is not the object of our present undertaking to enter into any critical investigations concerning the chemical processes by which these manures contribute so effectually to the improvement of vegetation. It is sufficient for our present purpose to discover their natural and indispensable relation to the continued and successful progress of that operation. In the writings of most authors on such subjects, we often meet with a great deal about rape and linseed cake, and several other substances attainable only in certain level situations; and their uses in the vicinity of such places must be of importance. But the production of the dung of domesticated animals in improved countries, is a universal thing, and may justly be styled the staff of vegetation; and every one who carries on his operations on a large scale, ought to adopt every means in his power to augment these most valuable ingredients. In the vicinity of large cities, where the produce of the lands, to a great extent, are invariably carried to the public markets, nothing can be more reasonable than ample returns to such lands of those offals of all kinds, so constantly accumulated from the vast numbers of horses of all description, milch cows, butchers' cattle of all kinds, hogs, poultry, &c. &c. I might also enumerate another substance still more valuable than either of the above, which at least during some months of the year might be very beneficially appropriated for the purposes of promoting vegetation. In the most polite and civilized nations of the old world, night soil is carefully collected and so artfully managed, as entirely to prevent any disagreeable consequences arising from the preparation of it as a valuable manure. Some kinds of manure are proper only for particular kinds of soil; but what so greatly enhances the value of the above substances, is, that they are proper for all kinds of soil that are intended to produce substantial crops. The stronger the soil, the less quantity will serve; but in all instances where abundant crops are derived, liberal supplies of the above ingredients ought to be freely applied and laboriously incorporated with the teeming earth. Wood ashes are a valuable manure for light soils. About two years ago, I strewed about 20 bushels of unslacked hickory ashes on about half an acre of a dry sandy soil. Various crops have since been evidently benefitted by this dressing; but the most remarkable effect that I have observed from it, is, that ever since it seems most luxuriantly to produce the Alsine media (or chickweed,) a plant I had never before seen in the vicinity, and which, especially in summer, is peculiar only to strong moist soils. This is an application capable of producing or retaining moisture in a dry soil, superior to any thing I have ever seen, and stamps an invaluable worth on ashes as a manure for this kind of soils. But on strong moist soils, they answer no good purpose. Horn shavings are an excellent manure for potatoes, strewed in the drills or hills over the sets, at

the rate of about twenty five bushels per acre. They produce earlier with this than any other manure I have ever tried; they are also a good manure for grass and every other crop to which I have applied them. Soot, especially on most soils, exceeds every other manure I have ever seen for grass; it forms a very valuable ingredient in our street manures, and would be well worth the collecting, for the particular application of it to early pastures, &c. It should be strewed on the ground as early in spring as possible.

The various kinds of sea weed, and indeed all marine productions, afford useful manures, and ought to be carefully collected and applied to the soil by all those who have opportunities; for the production of cabbage and asparagus, they exceed perhaps every other manure. The refuse vegetable ingredients in all grounds appropriated for horticultural purposes, are of great value as articles of manure; many of them are highly relished by cows, to which they prove an excellent article of fodder; and in the pig pen it is astonishing how great a quantity of manure may be accumulated, by depositing therein all rough weeds, potatoe vines, and exhausted vines of all the cucumber and melon tribes, &c. &c. These substances as soon as they become well saturated in the pig pen, should be removed and intermixed with good soil or other compost, in which their excessive fermentation ought to be checked by regular applications of earth, and a few layers of the vegetable stuff if possible, well intermixed with the whole. When no pig pen is on the premises, all the refuse ought to be carefully deposited in some appropriate place, and intermixed with layers of earth and other manure; when their decomposition is wished to be accelerated, it may be most effectually promoted by intermixing therewith slight layers of quick lime. According to the present theory of chemical philosophy, the less fermentation that takes place in manures, previous to their application to the soil, so much are they the better. I have never approved of permitting any manure to undergo any excessive fermentation; but there are abundant reasons for allowing a moderate degree of it to take place. In the first place, fresh cow dung when turned into a dry soil, incorporates with it in the same way, if I may be permitted the simile, as drops of water are often observed to do on dry flour or dust; they roll up in round globules, and if dry weather should happen to set in, (a thing always to be guarded against here,) the effects of such an application prove rather injurious. I always intermix some horse dung with cow's, in sufficient quantity to ferment it so as to render it short and free; and these manures when intermixed, are not apt to overheat, and are easily regulated by the application of soil to any degree thought proper: and I make no doubt, that even those supple fluids, that some philosophers are so much afraid of making their escape, will be considerably absorbed by the very moderate intermixture of a little soil, which is generally very easily obtained, and at little expense. Horse dung on the other hand, is generally brought from the stables, about half straw; and when applied to land in that rank state, it is impossible to turn it down; and when the soil is loose, no plough as yet invented can cover it. A certain degree of fermentation is absolutely necessary to render it at all manageable; and when cow dung cannot be obtained to intermix with it in this operation, any kind of soil should be applied to prevent its heating too much. The same mode of treatment is necessary to be observed in the management of weeds, and all other waste vegetables.

The principal fossil manures, lime and gypsum, are most commonly applied for the purposes of agriculture, and for which the last seems to be peculiarly adapted, it being a very material ingredient in the constitution of grapes, which extract with avidity from the soil; and hence the great success that attends its application to grass lands. Most other vegetables seem to extract it in small quantities; and as it exists in considerable proportion in those manures which I have termed the staff of vegetation, when they are duly applied, its use otherwise is perhaps less material. Lime, in that state in which it is got from old buildings, is an excellent improver of all soils, especially of those deficient in calcareous matters; and for orchards there is, perhaps, no dressing equal to it. Oyster and other sea shells produce their amazing salutary effects on orchards, also, from their calcareous qualities. Quick lime contains for some length of time, qualities altogether different from those it acquires by exposure to air. In its first state it is caustic, and its salutary operations in this state, act chiefly in accelerating the decomposition of inactive vegetable matters, thereby rendering them soluble and fit for their immediate absorption by the roots of plants. Those soils, therefore, deficient in such matters, ought never to be manured with lime in its recent state.

There are several other engredients, such as salt and oils, &c., whose salutary effects on vegetation have been occasionally demonstrated; and it is altogether probable that the ingenious assiduity of philosophical perseverance, will still continue to contribute much additional information, respecting the various processes connected with the fertility of soils and laws of vegetation. In our present state of advancement, we ought to husband well those maxims founded on the adamantine base of long and well tried experience, and wield with a fearless hand that invaluable support on which both old age and youth may rest with security.

---

GUARDING SINGLE TREES IN PARKS.—What is the simplest, cheapest, and most sightly mode of guarding single trees planted in parks or lawns, from the depredations of deer or other animals?—*Answer.* Thorn

branches, tied with hazel or willow shoots, and understocking the pastures.

[From the Gardener's Magazine.]

**ART. 29.**—*On preparing Ice and filling an Ice-house, so that the Ice may keep for two or three years. By Mr.* James Young, *Gardener to Henry Smith, Esq. of Wilford House, Nottinghamshire, England.*

Sir,—None of your correspondents having laid before us the proper method of preserving ice, so that it may keep in an exposed situation through the hot months of summer, for one, two, or more years, as may be required, I now venture to do so. Most gardeners who are in the habit of laying up ice annually for summer use, complain of its melting away too rapidly. This, I presume, is owing to the method they practise to preserve it. To remedy this evil, the method which I have practised for a considerable number of years, with gratifying success, is as follows :—

In the months of December or January, when the waterpools are frozen to a sufficient thickness, say one or two inches, proceed to break the ice in pieces, and draw it off the water with iron hooks, conveying it to the ice-house in carts as quickly as possible. Before throwing it into the house, three or four men should be employed to break it in small pieces, about the size of common road-metal. Then carry it into the house, where two men should be again employed in pounding it almost to powder. Lay the bottom and the sides of the house with a layer of wheat-straw, three or four inches thick. After there are about two feet of ice thus pounded, take ten pounds of salt, and dissolve it in ten gallons of boiling water. When the salt is sufficiently dissolved, pour it on the ice through a common garden watering-pot; thus going on regularly every two feet, watering, and laying the sides with straw till the house is filled, finishing with a double quantity of the salt water. After it has been in eight days, and when it has subsided, fill up closely with small bundles of straw, to exclude all air as far as possible.

An ice-house filled in this manner will be found, when opened in summer, to be as firm as rock, and to require at all times the force of a pickaxe to break it up. It will be found to keep three times longer than the common method of filling ice-houses, and more suitable for being received from the ice-house for use, as it will keep three times longer when exposed to the air. I was induced to try the above method on account of our ice-house being placed in a very exposed situation. The sun shines from rising to setting on it, and it was found impossible, before adopting this plan, to keep ice above a year, and now it keeps three years, and the last of it as good as the first.

I remain, Sir, &c. James Young.

*Wilford House, Sept.* 5, 1827.

**ART. 30.**—*Reports from the Navy Department in relation to experiments on American water rotted Hemp, when made into Canvass, Cables, and Cordage. January* 1828.

In 1824, the Commissioners of the Navy made a report on the process practised in Russia, in preparing Hemp for market. A part of this report with that for the present year, composes the printed document before us. By order of our government, a series of experiments have been made by the Navy commissioners, on the strength and durability of American Hemp, when made into Cordage. They remark that, "if there be a difference between the American and best Russia watter-rotted Hemp, when brought to our market, the commissioners would unhesitatingly say it is in favor of the former." This superiority depends on the manner of rotting the Hemp—the results of all the experiments clearly proving that *water*-rotting is necessary, that the strength and durability of the article may equal the Russian, and come into successful competition with it. "The habit of dew rotting," say the commissioners, "has become so fixed, that it is apprehended a considerable time will elapse before the American community can be persuaded to change it, and resort to the preferable system of water-rotting."

—

*On the culture and preparing the hemp in Russia, transmitted by the Hon. J. Q. Adams, Minister at St. Petersburg, March* 1810.

In Russia when the season is mild, the hemp seed is sown about the 1st June, of old style. The richer the soil of the land employed for it, the better. A chetwirt of seed, (100 chetwirts are equal to 73 quarters, Winchester measure,) is sown on a piece of land of 80 fathoms (English feet) long, and 60 fathoms broad.

The land is first ploughed and harrowed, and about 200 single horse loads of dung being spread upon it, it is left for six days, when it is again ploughed, and the seed sown and harrowed the same day. In about four months the seed becomes ripe, and the hemp is then pulled up with the roots; if it be allowed to remain too long in the ground, it is apt to become harsh. It is bound into heads or bunches of four handfuls each; these are hung upon sticks placed horizontally, thus, ɣ–0–0–0–0–0–0–ɣ and allowed to remain so for two days. It is then made into *cut* or *thrashed* hemp, as may be agreeable. The cut hemp is made by chopping off the heads containing the seed. These are put into the kiln, and, after remaining there for eighteen hours, the seed is beaten out.

If thrashed hemp is to be made, the heads or tops must not be cut off, but the bunches of hemp placed entire in the kiln; and, if the weather be warm, it will be sufficiently dry in three days, when the seed must be thrashed out of the heads. In either case, three days after the seed is separated from it, the hemp must be put to steep or rot, either in a stream or a pond, and

that the hemp may be entirely immersed, it is put under wooden frames |=====| upon which stones are placed, or, where they are not to be had, earth is substituted, after the frames are covered with planks.

The clearer and purer the water, the better will be the color of the hemp. Where the water is warm, three weeks steeping will be sufficient, but, if cold, as in rivers, springs, &c. five weeks or longer may be necessary. At the expiration of this period, a head of the hemp is taken out and dried; if, on beating and cleaning it, the husk comes off, the hemp may then be taken out of the water, but if the husk still adheres to it, it must be allowed to remain some time longer. This trial must be repeated from time to time, till the husk separates, when the hemp must be taken out of the water, and suspended to dry, as directed before, on its being taken off the ground.

The hemp is now made into the two sorts, distinguished by the names of *Spring* and *Winter* hemp; the former being dry and rather of a withered appearance, the latter more moist, and of a fine brownish green color, containing more of the vegetable oil, and therefore the most apt to heat; though, if not shipped at St. Petersburg or Riga, before September, there is not much risk of its heating any more on board the ships, especially on short voyages, as to England; and are the best fit for cables. If it be intended that the hemp should be early ready for the market, it is made into Winter hemp by the following process: On being taken out of the water, it is left suspended in the open air for about a fortnight, when it is put into the kiln for twenty-four hours, after which it is broken by means of a hand-mill, and the husk is then beaten off by striking the heads obliquely with iron and wooden instruments, of the shape of a large two-edged knife; lastly, to unravel it, it is drawn through a wooden comb, or card, with one row of wide wooden teeth, fixed perpendicularly.

The hemp is then laid up or suspended in sheds, and is fit to be sorted, bound into bundles and loaded into the barks.

The hemp to be prepared as Spring hemp, is allowed to remain suspended, and exposed to the weather the whole Winter, until it be dried by the sun in the Spring, when it is broken and cleaned in the same manner as the Winter hemp.

As the greatest part of the Summer elapses before it can be made fit for the market, none of this hemp reaches St. Petersburg until the following Spring, that is two years after it was sown.

The hemp is sown in the same manner as linseed, rye, or wheat; land, of a sandy soil, may also be employed for it, but it must be strongly manured, otherwise it will be too short, and a flat country should always be preferred.

One chetwirt of seed commonly yields 25 loads (upwards 36 pounds English) of hemp, and twelve chetwirts of hemp seed.

—

The following observations, relative to hemp, are taken from the American Farmer, vol. 5, p. 99, and are said to be approved by the experience of practical men, in our own country, particularly Mr. Henry Kip, of Buffalo.

Hemp is a very hardy plant, resists drought and severe frost, is easier cultivated, less exhausting, and more profitable than many other crops, with which this does not interfere in its cultivation, (except the tobacco crop;) it is sown before, and gathered after, corn, and requires no attention when wheat is sown, harvested, or thrashed. It will grow year after year, on the same ground; on which, if sufficiently rich, it is the surest crop. It is liable to no diseases, and injured by no insects.

### THE SOIL.

The soil should be deep, clean, dry, rich, and mellow. The plant has a tap root, which descends to a considerable depth, and therefore the soil should be deep, and be thoroughly mellowed by deep and frequent ploughings. Fall ploughing, and two or three ploughings in the Spring together with harrowing, so as to smooth the surface, (and thereby enable the seed to be sown even, and the hemp to spring up equally, and be cut close to the roots,) are preparatory steps to the putting in of the seed.

### THE SEED WHEN SOWN.

The seed (to the amount of two bushels per acre, on middling soil, and three on rich ground,) should be sown as early as possible, in the Spring, after the ground becomes dry and well prepared. Early sowing renders the coat heavier and stronger, enables the hemp to cover the ground early, so as to smother weeds, and, before the sun becomes powerful, to shade the soil and preserve its moisture. The seed, after being cast as even as possible, should be harrowed in, to as equal a depth as may be, that it may all start together; and a heavy roller should then be passed over, or a brush drawn across, to smooth the surface, in order that the hemp may be cut close to the roots.

### RIPENING AND HARVESTING.

When the hemp becomes fit to be cut, the stalks of the blossom, or male hemp, turn yellow, become a good deal speckled, and drop most of their leaves, and if the air is still, a cloud of dust arises from the blossom stalks, and hangs over the field. When sown early, it will be fit to cut about the first of August. The above appearance will become indicative of the proper time, and then it should be cut without delay: for, if suffered to stand longer, (as about one half of the stalks blossom, and the other half bear seed,) the stalks of the male will wither and blacken, and the coat be of but little value; and the female hemp, which has stood

to ripen the seed, requires a longer time to rot than the male, and, consequently, both would be thereby injured. *The best way to get seed would be to sow some thinly in a separate patch.* The mode of cutting is preferable to that of pulling; a man will cut half an acre per day, and a quarter, pulled, is said to be a day's work. By the former practice, the inconvenience of dust, and the dirt attached to the roots, will be avoided. Cut hemp will be worth ten dollars a ton more than the pulled. Knives, or hooks, for that purpose, may be obtained for about $1 25 each. When cut, spread the hemp a day or two, to dry it, then bind it, and put it up in shocks.

WRETTING (OR ROTTING.)

As soon as harvested, in order to prevent the rains from discoloring it, proceed, as early as convenient, to wret it, by placing it in *clean pure water*, formed by a stream spring, or clear pond. If rotted shortly after cutting, about five days are generally required for the purpose. You will be able to judge, by taking out a handful and drying it; and if the stalk of sheaves will shake out, and separate easily from the bark, leaving it clean and entire, the process of wretting is completed. The bark, or lint of hemp, is connected with the stalk, by a substance which must be either wretted or dissolved, before they will separate; produce the separation, and the work is accomplished. Experience will be the best criterion. The water in which it is rotted should not run rapidly, as it would in that case wash away the coat. You may have three or four wagon loads of hemp, to the depth of three or four feet, sunk at a time, but it should be completely submerged, though not suffered to touch the bottom. If separate quantities are put in on several successive days, the days and quantities should be noted, for the purpose of ascertaining which becomes first wretted, and which should, therefore, be first taken up; for, if left in the water a day or two too long, the hemp will be materially injured.

DRESSING AND SECURING.

When rotted, open and spread it, that it may dry soon. The process for breaking and swingling, is the same as that for flax. When it grows too long for dressing (say from 8 to 10 feet) it may be cut into two equal parts without any injury. Be very particular in keeping the long and short hemp separate, and not have the seeds and butt ends put together: be also careful to dress it clean. When dressing it put twelve handfuls in one head, laying them straight, the length of the hemp. The handfuls must not be tied, but bind the heads tight with a small band, about one foot from the butt end: it will then be ready to put into such sized bales as may be suitable. Some bail it into a box, across the bottom of which four ropes are laid to tie the hemp when pressed into it. When packed, it should be perfectly dry, otherwise it will rot.

The following remarks from the "Plough Boy," on the subject of water-rotting in preference to dew-rotting, coincide with the opinion of experienced cultivators: "If the crop is to be dew-rotted and got out by hand, its profits must be comparatively small, because it cannot be thus prepared to command the highest price in market, complete in quality with the Russian hemp, much less drive it from our markets. But if the American hemp planter be prepared with proper machinery to dress and prepare it, we ought not to doubt, much less to despair, of his ultimately arriving at a perfection in the production and dress of the article to equal, if not excel, the best samples of Russia hemp.

**ART. 31.**—*Directions for the cultivation of the Cape Brocoli; extracted from* WILSON'S *Economy of the Kitchen Garden, now in press.*

This is one of our most delicious and valuable vegetable productions. In point of quality, its flowers in this country are, by good judges I believe, universally allowed at least to equal, if not to surpass those of the cauliflower. And what adds so much to its value, is, that its culture is as easy and simple as any common cabbage. It is not many years since it was first introduced into this country, and only about seven or eight years since its proper mode of culture was correctly understood. There is a number of varieties of this plant, none of which have ever been found worthy of cultivation in this country, except this. And from the many disappointments that had always attended former attempts to cultivate the other sorts, there is every probability that this too, would either never have been prosecuted successfully or attempted in any extensive degree, had it not been for the emulation excited among the members of the New-York Horticultural Society, for the persevering prosecution of the culture of this valuable vegetable. Their labors have proved completely successful; but its culture still continues too much circumscribed. I will now give some information as to the proper mode of its cultivation. There is no doubt but some little difference in the time for sowing the seed, will have to be practised in the various latitudes of the eastern and middle states. But the time being correctly known for the vicinity of New-York, the others need be at no great loss to hit upon a practical calculation. Much depends upon obtaining the right sort of seed; for it has been pretty well proved by experience that there is no dependence on the success of any sort except that which is denominated the Purple Cape Brocoli. If the seed is sown too early the plants arrive at maturity before the heat of summer is over, and never after do well; for in August they cannot flower much, and, by having to remain in a stationary state after arriving at maturity, when the

proper season arrives, their having had to remain sometime dormant seems to destroy their vigor, and their produce of flowers if any at all, are very inferior. And if it is sown too late, the cold attacks them before they attain that strength and firmness which it is necessary for them to possess some time before the beginning of frosty nights. The last of August then is the proper time for the plants to arrive at maturity, and for this purpose, the seed should be sown on any bed or border of common garden soil, on the fifteenth day of May. This and most other seeds sown at this season, should be trode in with the feet, and the bed smoothed lightly over with a rake. By the beginning of July the plants will be in fine order for setting out. It would not be advisable to set them out before July, for they do best when the plants are strong and of good size. So in the first week in July, prepare your ground for the plants. I have raised good crops of them both on light and heavy soils: but it is of no use to plant them in any soil unless it be in good order, and well manured, and in this case they will do on any ordinary garden ground either old or new, although this last is their favorite. Let the ground at all events, be well manured and well dug: set the the plants out in rows, two feet and a half apart, and two feet distant in the rows. It is seldom the black grub meddles much with plants set out so late in the season as this, but they must be carefully examined every morning, and wherever any are seen cut off, the grub must be hunted and killed, and the vacancy filled up from the seed bed, in which a few plants should always be left for a reserve. The ground must be kept constantly loose and clean by frequent hoeings, and towards the end of August some of them will likely begin to flower. In the beginning of September more will begin to show, and from the middle of the month until the middle of November, they produce one continual succession of flowers. The degree of frost they withstand, without sustaining the least injury, when they are in their highest state of flowering, is astonishing. And the most singular and invaluable characteristic of this plant is the great length of time which is contained between their first beginning to flower and their final termination; and that too, all from the same seed, sown at the same time, and the plants all treated precisely in the same manner. Whatever plants may remain at the setting in of a settled frost, should be taken up and laid in a garden frame as directed for fall cauliflowers, and I do not think that one in a thousand would miss flowering in the course of the winter. I have frequently flowered the remainder of my whole crop in this way, and since the seventh day of September last, I have never been one day without some plants being in a flowering state; and at present, February 1828, there is no appearance of the stragglers I laid in a frame in December, stopping their blooming career. I have had the last plant of my crop flower in April, and all things considered, I am convinced that this is one of the most valuable garden productions (the Ruta Baga not excepted,) of any we are yet acquainted with. The mode of managing it, in order to obtain good seed here, appears to be a little more precarious; nor does it appear certain whether we will ever be able to raise enough to prevent us from having to apply as at present to England for it. Although we are progressing bravely in our horticultural improvements, yet much remains to be achieved by future exertion.

[For the New-York Farmer and Horticultural Repository.]

**ART. 32.**—*Letter from* WM. PRINCE, *of the Linnæan Garden, Flushing, in answer to Mr. Floy's, concerning the Peach denominated Emperor of Russia.*

LINNÆAN BOTANIC GARDEN,
January 28, 1828.

DEAR SIR—Under date of the 5th instant, I notice a communication from Mr. Floy, relative to certain remarks contained in my publication touching "Synonyms in Fruits," part of which he supposes is an "oblique hit" at him; and he seeks to show that he has not committed the supposed error. I have only to reply, that my remarks were general, and that I was not previously aware that he was the person who had given the name referred to. And as Mr. F. seems perfectly to accord with me as to the impropriety of re-christening fruits, I accede that *if his new variety is sufficiently distinct*, he had an undoubted right to give it any name he thought proper; but I have not myself seen differences which I deemed sufficient for that purpose, and have found others of a similar opinion. And it appears that the investigations of the Horticultural Society of London have caused them to come to the same conclusion; for by reference to their Catalogue of 1826, page 83, it will be seen that they have arranged the *Emperor of Russia*, the *Serrated*, and the *Unique*, as synonyms for the same peach. It therefore now rests with the public to test their qualities, and to decide whether they are sufficiently distinct to be called by different names. Yours, respectfully,

WM. PRINCE.

[For the New-York Farmer and Horticultural Repository.]

**ART. 33.**—*Beauty of Native American Plants: communicated by Dr.* SAMUEL L. MITCHELL.

Bernard McMahon, Esq., in his American Gardener's Calender, p. 72, has these fine sentences: "Here I cannot avoid remarking, that many flower gardens are almost destitute of bloom, during a great part of the season; which could be easily avoided, and a blaze of flowers kept up, both in this department and in the pleasure grounds, from March to November, by introducing from our woods and fields, the various beautiful

ornaments, with which nature has so profusely decorated them. Is it because they are indigenous that we should reject them? Ought we not rather cultivate and improve them? What can be more beautiful than our Lobelias, Orchises, Asclepiases, and Aoters; Dracocephalums, Gerardias, Monardas, and Ipomœas; Liliums, Podalyrias, Rhexias, Solidagos, Hibiscusos, Phloxes, Gentianas, Spigelias, Chironias, Sisyrinciums, Cassias, Aphryses, Coreapsises, and Cypridiums; Violas, Rudbeckias, and Liatrises; with our charming Limodorum, fragrant Arathusa, and a thousand other lovely plants, which, if introduced, would grace our plantations and delight our senses!"

**ART. 34.**—*Correspondence between the Hon.* RICHARD RUSH, *and* DAVID HOSACK, M. D., *relative to the introduction of foreign seeds and plants into this country—and the report of a committee of the New-York Horticultural Society, recommending the establishment of three National Gardens.*

TREASURY DEPARTMENT, May 15, 1827.

DEAR SIR—The President has it at heart to cause to be introduced into our country all such trees and plants, (not heretofore known among us,) from other countries, as may give promise, under proper cultivation, of flourishing and of becoming useful in any part of the United States. To this end, it is my intention to transmit proper directions to our consuls abroad, and I am about to ask the favor of your aid towards the execution of the plan. It has occurred to me that a convenient manner in which to afford this aid, will be your indicating on the margin of the enclosed sheet, which contains a list of the foreign countries where our consuls are stationed, any production or productions of the vegetable world, peculiar to such countries as appear to be worthy of transplantation here. Forest trees, useful for timber; grain; fruit trees; vegetables for the table; esculent roots; in short, plants of every description, whether used as food or for purposes connected with any of the useful arts—all will fall within the scope of the plan proposed. If, therefore, you will have the goodness to note on the enclosed list, or on a separate slip of paper, to be appended to it, the names of any such, I shall feel thankful to you. I have no other apology to offer for this intrusion upon you, than the interest I know you always feel in objects of a public, and appearing to be, of a beneficial nature.

I will ask the favor of hearing from you in reply to this communication, by the first week in June, if your convenience will allow it.

Accept my thanks for the copy of the inaugural discourse before the Rutgers Medical College, which you were so kind as to send me lately, and believe me, dear sir, with great respect,

Your obedient and faithful servant,

RICHARD RUSH.

*Dr. Hosack.*

DEPARTMENT OF STATE, MARCH 22, 1827.

*List of the Ministers, Consuls, and other Diplomatic and Commercial Agents of the United States in Foreign Countries, and of the places of their Residence.*

ENGLAND.

| | | |
|---|---|---|
| Albert Gallatin,* | Envoy Extraordinary and Minister Plenipotentiary, | London. |
| Wm. B. Lawrence, | Sec. of Legation, | do. |
| T. Aspinwall, | Agent, &c. and Consul, | London. |
| James Maury, | Consul, | Liverpool. |
| Herman Visger, | do. | Bristol. |
| R. W. Fox, | do. | Falmouth. |
| T. W. Fox, | do. | Plymouth. |
| Wm. Davy, | do. | Kingston, on H. |
| R. B. Hunter, | do. | Cowes, I. of W. |
| Joel Hart, | do. | Leith, Scotland. |
| David Walker, | do. | Glasgow. |
| Thomas Wilson, | do. | Dublin, Ireland. |
| R. Harvey, | do. | Cork. |
| S. Luke, | do. | Belfast. |
| B. Henry, | do. | Gibraltar. |
| | do. | Isle of France. |
| T. Wynns, | do. | Turk's Island. |
| W. R. Hinginbotham, | Com. Agent, | Bermuda. |
| John Storr, | do. | Nassau, N. P. |
| | Consul, | St. Chris. & An |
| E. Roberts, | do. | Demerara. |
| P. Lanman, | do. | Kingston, Jam. |
| Chas. L. Bartlett, | Com. Agent, | Island of Trin'd |
| J. M. Kankey, | do. | Barbadoes. |

FRANCE.

| | | |
|---|---|---|
| James Brown, | Envoy Extraordinary and Minister Plenipotentiary, | Paris. |
| Daniel Sheldon, | Sec. of Legation, | do. |
| I. C. Barnett, | Agent, &c. and Consul, | Paris. |
| Dan. Strobel, | Consul, | Bordeaux. |
| Joshua Dodge, | do. | Marseilles. |
| F. C. Fenwick, | do. | Nantes. |
| E. Church, | do. | L'Orient. |
| R. G. Beasley, | do. | Havre de Grace. |
| J. F. Cooper, | do. | Lyons. |
| A. de Tubeuf, | do. | Cette. |
| J. J. Debesse, | do. | La Rochelle. |
| F. B. Faures, | do. | Guauda'lpe Isl. |
| S. Mareau, | Consul, | Martinique Isl, |

*Returned to the United States.

RUSSIA.

| | | |
|---|---|---|
| H. Middleton, | Envoy Extraordinary and Minister Plenipotentiary, | St. Petersburg. |
| Chs. Pinkney, | Sec. of Legation, | do. |
| A. P. Gibson, | Consul, | St. Petersburg. |

SPAIN.

| | | |
|---|---|---|
| A. H. Everett, | Envoy Extraordinary and Minister Plenipotentiary, | Madrid. |
| J. A. Smith, | Sec. of Legation, | do. |
| A. Burton, | Consul, | Cadiz. |
| C. Douglass, | do. | Barcelona. |
| Obadiah Rich, | do. | Valencia. |
| G. G. Barrell, | do. | Malaga. |
| R. Montgomery, | do. | Alicante. |
| F. X. de Ealo, | do. | Bilboa. |
| Geo. W. Hubbell, | do. | Isl. of Manilla. |
| Payton Gay, | do. | Isl. of Teneriffe. |
| Geo. P. Ladico, | do. | Balearic Isl's. |
| T. M. Rodney, | Com. Agent, | Havanna, Cuba. |
| R. R. Stewart, | do. | Trinidad, do. |
| T. Backus, | do. | St. Jago, do. |
| H. K. Stearns, | do. | Barascoa, do. |
| L. Shoemaker, | do. | Matanzas, do. |
| Wm. Simons, Jr. | do. | Porto Rico. |

PORTUGAL.

| | | |
|---|---|---|
| T. L. L. Brent, | Charge d'Affaires, | Lisbon. |
| I. P. Hutchinson, | Consul, | Lisbon. |
| | do. | Oporto. |
| J. H. Marsh, | do. | Isl. of Madeira. |
| C. W. Dabney, | do. | Fayal. |
| S. Hodges, Junr. | do. | C. de Verd Isls. |

NETHERLANDS.

| | | |
|---|---|---|
| C. Hughes, | Charge d'Affaires, | Brussels and the Hague. |
| J. W. Parker, | Consul, | Amsterdam. |
| Emanuel Wambersie, | do. | Rotterdam. |
| C. Barnett, | do. | Antwerp. |
| Thomas Trask, | do. | Surinam. |
| P. Robinson, | do. | Isl. of Curacoa. |
| J. Shillaber, | do. | Batavia. |
| Louis Mark, | do. | Ostend. |
| J. Hollingsworth, | Com. Agent, | St. Eustacia. |

SWEDEN.

| | | |
|---|---|---|
| J. J. Appleton, | Charge d'Affaires, | Stockholm. |
| D. Erskine, | Consul, | do. |
| C. A. Murray, | do. | Gottenburg. |
| H. Janson, Junr. | Consul, | Christiansand. |
| R. M. Harrison, | do. | St. Barthol. |

UNITED MEXICAN STATES.

| | | |
|---|---|---|
| J. R. Poinsett, | Envoy Extraordinary and Minister Plenipotentiary, | Mexico. |
| J. Mason, Junr. | Sec. of Legation, | Mexico. |
| J. S. Willcocks, | Consul, | Mexico. |
| G. R. Robertson, | do. | Tampico. |
| T. Reily, | do. | Aguatulco. |
| H. Gregg, | do. | Acapulco. |
| Wm. Taylor, | do. | Vera Cruz & Alvarado. |
| D. W. Smith, | do. | Refugio on Rio Grande. |
| C. W. Webber, | do. | Chihuahua. |
| | do. | Sta. Fe. |
| J. W. McGoffin, | do. | Saltillo. |
| H. Perrine, | do. | Campeche. |
| J. L. Kennedy, | do. | Mazatlan. |
| David Dixon, | do. | San Anto. Mex. |

MISSION TO TACUBAYA.

| | | |
|---|---|---|
| J. Sergeant, | Envoy Extraordinary and Minister Plenipotentiary, | Tacubaya, Mex. |
| J. R. Poinsett, | do. | do. do. |
| Appointed Sec. of the Mission, | | do. do. |

REPUBLIC OF COLOMBIA.

| | | |
|---|---|---|
| B. T. Watts, | Charge d'Affaires, | Bogota. |
| J. Macpherson, | Consul, | Carthagena. |
| J. G. A. Williamson, | do. | La Guayra. |
| W. J. Seaver, | do. | Santa Martha. |
| W. Wheelwright, | do. | Guayaquil. |
| A. B. Nones, | do. | Maracaybo. |
| F. Litchfield, | do. | Porto Cabello. |
| W. Radcliff, | do. | Panama. |

BRAZIL.

| | | |
|---|---|---|
| *Condy Raguet, | Charge d'Affaires, | Rio de Janeiro. |
| W. H. D. C. Wright, | Consul, | Rio de Janeiro. |
| W. Odlin, | do. | San Salvador. |
| John T. Mansfield, | do. | Pernambuco. |
| J. de Santos Montiero, | do. | Maranhao. |
| Chas. B. Allen, | do. | Para. |
| Joshua Bond, | do. | Montevideo. |
| L. Corning, | do. | Isl. of Maranham. |

REPUBLIC OF CENTRAL AMERICA.

| | | |
|---|---|---|
| W. B. Rochester, | Appointed Charge d'Affaires, | Guatamala. |
| C. Savage, | Consul, | Guatemala. |

REPUBLIC OF BUENOS AYRES.

| | | |
|---|---|---|
| J. M. Forbes, | Charge d'Affaires. | Buenos Ayres. |
| Geo. W. Slacum, | Consul, | Buenos Ayres. |

CHILE.

| | | |
|---|---|---|
| Heman Allen, | Envoy Extraordinary and Minister Plenipotentiary, | St. Jago de Chile. |

* Returned to the United States.

| | | |
|---|---|---|
| Sam'l Larned, | Sec. of Legation, | St. Jago de Chile. |
| M. Hogan, | Consul, | Valparaiso. |
| D. Wynne, | do. | St. Jago de Chile. |

REPUBLIC OF PERU.

| | | |
|---|---|---|
| J. Cooley, | Charge d'Affaires, | Lima. |
| W. F. Taylor, | Consul, | Quilca & Arica. |
| W. Tudor, | do. | Lima. |

DENMARK.

| | | |
|---|---|---|
| H. Wheaton, | Charge d'Affaires, | Copenhagen. |
| J. Raynals, | Consul. | do. |
| R. Jaques, | do. | Isl. of S. Cruz. |
| N. Levy, | do. | Isl. of St. Thom. |
| J. Ridgway, | do. | Isl. of St. Croix. |

PRUSSIA.

| | | |
|---|---|---|
| J. G. Boker, | Consul, | Elberfield. |

SAXONY.

| | | |
|---|---|---|
| C. F. Goehring, | Consul, | Leipzig. |

HANSEATIC TOWNS.

| | | |
|---|---|---|
| J. Cuthbert, | Consul, | Hamburg. |
| F. J. Wichelhausen, | do. | Bremen. |
| J. Hill Clark, | do. | Lubec. |

ITALIAN STATES.

| | | |
|---|---|---|
| T. Appleton, | Consul, | Leghorn, Tuscany. |
| J. Ombrosio, | do. | Florence, Tuscany. |
| R. Campbell, | do. | Genoa, Sardinia. |
| V. A. Sasserno, | do. | Nice, Sardinia. |
| G. Moore, | do. | Trieste, Austria. |

ROMAN STATES, AND KINGDOM OF THE TWO SICILIES.

| | | |
|---|---|---|
| F. Cicognani, | Consul, | Rome. |
| Alex. Hammet, | do. | Naples. |
| Benj. Gardner, | do. | Palermo. |
| J. L. Payson, | do. | Messina. |

SMYRNA.

| | | |
|---|---|---|
| David Offley, | Consul, | Smyrna. |

BARBARY POWERS.

| | | |
|---|---|---|
| Wm. Shaler, | Consul General, | Algiers. |
| Saml. D. Heap, | Consul, | Tunis. |
| Chas. D. Coxe, | do. | Tripoli. |
| J. Mullowny, | do. | Tangier, Morocco. |

HAYTI, (ST. DOMINGO.)

| | | |
|---|---|---|
| A. Armstrong, | Commercial Agent, | Port au Prince. |
| J. A. Holden, | do. | Aux Cayes. |
| J. E. Brice, | do. | Cape Haytien. |

SANDWICH ISLANDS.

| | | |
|---|---|---|
| J. C. Jones, Jr. | Commercial Agent, | |

CHINA.

| | | |
|---|---|---|
| J. H. Grosvenor, | Consul, | Canton. |

[*From Mr. Rush to Dr. Hosack.*]

WASHINGTON, July 14, 1827.

DEAR SIR—Will you permit me to hope that I may be furnished, as soon as convenient, with the report of the Committee of the Horticultural Society, as alluded to in your last obliging letter.

Accept, dear sir, the assurances of my high respect and esteem. RICHARD RUSH.

*Dr. Hosack.*

[*From Dr. Hosack to Mr. Rush.*]

NEW-YORK, Jan. 22, 1828.

MY DEAR SIR,—Some time since you did me the honor to consult me, relative to the trees, plants, &c. that it would be desirable should be imported into the United States from different parts of the world. As I informed you, I submitted your communication, which I considered of great national importance, to the Horticultural Society of New-York, and promised you the result of their deliberation. A committee of our best informed practical men was appointed. The enclosed report which was prepared by them, I have now the honor to enclose for your consideration, and in my opinion it will form the basis of some important measures, worthy of the attention of the general government. The plan suggested of forming three national botanic gardens, will, I am persuaded, be approved by the president and the other members of the administration, and properly recommended to the two houses of Congress, cannot fail to receive from Government, the support necessary to carry the same into effect.

Had the state of New-York, after making the purchase of the Botanic Garden, which a few years since was established in the vicinity of this city, appropriated a small annual sum for its preservation and increase, as was suggested and earnestly solicited, we long since should have had an institution which would have become the pride and ornament of our state and country, at the same time that it would have been the means of diffusing a knowledge of the indigenous vegetable productions of the Western Hemisphere, as well as of those plants, the growth of foreign climes, that are most useful in medicine, in agriculture and the arts.

Should the government of the United States foster an institution of this nature, in the vicinity of the city of New-York, I can assure you it will receive the most ardent attention and care of the Horticultural Society, which is composed of many practical men, of great intelligence and skill, and who do honor to their profession.

With the hope that the plan which you have commenced, may be matured for the benefit of science, and the interest of our country, I am, dear sir, with sentiments of great respect and esteem,

Truly yours,

DAVID HOSACK.

*The Hon. Richard Rush, Secretary of the Treasury.*

P. S. I send you a copy of the Discourses delivered o the Horticultural Society, and of the late publications of the inspecti ng committee of that institution.

D. H.

—

*Report of the Committee.*

The Committee appointed by the New-York Horticultural Society to take into consideration the request proposed to this institution by the government, and to report to the society such kinds of foreign seeds or plants as would be beneficial to the country, with a view of forwarding the same to the consuls residing in foreign countries, for the purpose of introducing them into the United States, beg leave to report—That they have given this subject their most serious consideration, and acknowledge that they have discovered a considerable difficulty to point out with any degree of exactness, all such kinds of seeds or plants, as would be most useful in a national point of view, not being exactly certain of all the different kinds of fruit trees, forest trees, and plants, from foreign parts, that are now cultivated in the country. But the committee are well assured that numbers of trees and plants could be introduced which would very essentially contribute to the increase of national prosperity, considered as articles of commerce, of manufacture, of agriculture, horticulture, dyeing, tanning, and the arts, including the various plants employed in medicine. The range of these United States, comprehending such a variety of climate as to be capable of cultivating almost every vegetable production in the known world, gives to the subject great additional interest. In general, however, it would be proper for our agents abroad, to inquire after all such kinds of seeds, trees, or plants, as appear to be the most useful in the country in which they reside, either for timber, or of value for any of the above mentioned uses, and in as great a variety as could be obtained; and especially all such esculent vegetables, as the particular country furnished, of superior quality, either for agriculture or horticulture. From Russia and the northern parts of Europe, much improvement to this country might be expected by the introduction of their lofty pines of various sorts, firs, spruces. larches, and other valuable timber, all of which could be raised in abundance in our northern states. From the more cultivated parts of Europe we might expect great benefit by the introduction of all their finest cultivated forests, esculent vegetables of superior quality, and their medicinal plants, as well as such vegetable productions as are useful in the arts. From South America and the West Indies, we might receive the tropical fruits, many valuable medicinal plants, and dye woods, not to mention a number of beautiful flowering shrubs and bulbous roots: all these, as well as the vast number of beautiful and useful plants from the East Indies and China, might be naturalized to grow in the open air in Florida and our southern states. We have a climate for every thing, even to the cinnamon, cassia, camphor, alspice, nutmeg, peruvian bark, logwood, mahogany, tea, coffee, and in fact, every thing, not excepting the cork tree, which would flourish in the same latitude with our live oaks; and while our ships trade to every part of the world, it would not be very difficult to procure every thing wanted, with proper care and attention—and that too at very moderate expense. In order to procure a variety of useful articles, occasionally a practical botanist should be sent in some of our national vessels, to take charge of and collect in the best manner, such articles as may appear important. But it is a matter of much regret that while our agricultural and horticultural prospects have been much improved, our commerce arisen almost to a rivalship with the first nation in the world, we fall very far short of every nation of Europe in scientific gardening. We have no public botanic gardens of any consequence, nor experimental gardens, which are deemed of so much importance, that every part of Europe, even places of minor notice, can display one of these necessary and beautiful deposites, where all the vegetable kingdom is brought to the notice of every visitor. This is the more to be regretted, as our own native plants make the finest ornament of their gardens. We have no gardens of this nature of any consequence in this country: this is, perhaps, the reason that foreigners are much better acquainted with our native plants than we are. But we hope the time is not very remote, when we shall be able to vie with the first establishments of this nature in the world; we certainly possess superior advantages in the varieties of soil and climate, and if your committee are correct in the opinion they have formed of the expenses of establishing depositories of this nature, they could be conducted in a much cheaper manner than in any other nation in the world. If three or four establishments were provided in different parts of the union, under the care of experienced gardeners, to nurse and cherish the plants and seeds before they arrive at a proper size to plant out in the open air, to acclimate them to their proper place, the most important results may be anticipated. In order to effect this purpose in the best manner, it would be necessary to have three establishments; one in the north, one in the south, and one in a central part of the union. New-York having an open access to all parts of the world, and at all seasons of the year, would be a very desirable place of depot for one of these gardens. Florida, South Carolina, or Georgia, would afford an excellent situation for tropical fruits and articles received from warm climates, and Washington city ought to possess the centre establishment. From these three institutions every thing of importance might be disseminated throughout the Union, and all be transplanted to the soil and climate most suited to their nature and habit. Of the importance of gardens of this

kind, no doubt could be entertained; an acre or two would be sufficient to test the quality of fruits; one tree of every kind should be procured, and when they perfect their fruits and their peculiar kinds may be ascertained, grafts or cuttings could be sent to all parts of the country. By this mode we should be in possession of all the choice fruits of the world, correctly ascertained, and seeds to be distributed to every part of the country. Another important object would be to have about one acre of ground set apart as an experimental garden, to prove any new kinds of vegetables that may be introduced, and when found to be of a superior quality, seeds might be distributed and the useless or inferior kinds rejected. But another and a very important point will be attained, by having a complete collection of all our *native* plants; and from this selection we could at all times exchange with any foreign nation, and by this means command any thing of value which they may possess. Nor is this the only motive; it is to be feared that many of our valuable native plants, by the progress of cultivation, will in the course of time, be exterminated. We fear, indeed, that many things have already disappeared by the progress of cultivation.—By these public measures this evil will be most effectually prevented.

These gardens should be supported by the public, out of the public treasury, as all would be benefited in every part of the union, from these establishments. The expense would be nothing in comparison with the benefit that would accrue to the nation at large; no one individual is adequate to support an establishment of this nature, that would answer any valuable purpose; and if carried into effect by a society, *interest*, not public good, would govern all their movements, and in fact, such an association would very soon degenerate into a mere society of nurserymen or market gardeners.

It therefore does appear to your committee, that the establishment of gardens supported by the government, is the only proper course to be pursued, before any thing of importance can be done; for it is but of little use to import plants and seeds, however valuable they may be, unless proper depositories are provided for, to take care of them in a manner to insure their successful cultivation.

M. FLOY, *Chairman.*

*New-York, Jan.* 8, 1828.

—

[*From Mr. Rush to Dr. Hosack.*]

TREASURY DEPARTMENT,
26th January, 1828.

DEAR SIR,---I have received your favor of the 22d instant, with the communication which it covered from the Committee of the Horticultural Society of New-York, relative to the introduction of foreign plants into the United States, and will not fail to lay it before the President for his consideration.

Permit me to thank you also, for the publications which you were so obliging as to transmit with the above communication.

I have the honor to remain, with great respect,
Dear sir, your faithful and obedient servant,
RICHARD RUSH.

*Doct. David Hosack, New-York.*

[From the New-England Farmer.]

**ART. 35.**—*Recipe to destroy Insects. By* A. PARMENTIER, *proprietor of the Horticultural Botanic Garden, Brooklyn, N. Y.*

Three pounds and a half of strong soap—flour of sulphur, 3 pounds—mushrooms of the wild sort, 2 pounds; or three pounds of tobacco leaves or stalks—sixty quarts of running water or rain water. Divide the water into two equal parts—pour one half into a small barrel which is to be exclusively used for this purpose—put the soap in and stir it well, and add the mushrooms after having crushed them lightly. Boil the other half of the water in a kettle and put all the sulphur in it, after having tied it up in a linen bag, to which you will attach a weight which will cause it to descend to the bottom—let it boil 20 minutes and stir it with a stick so that the water may receive all the virtue and take the color of the sulphur. If the dose of these materials is greater, the power of the application will be proportionably increased—the amount stated being the minimum which will answer. Pour the boiling water into the barrel, shake it daily, till it is exceedingly fetid and offensive—bung up the barrel after every stirring, and after you make use of a part of the mixture. Syringe with this liquor the plants or parts of a tree infested by insects in a *dry* morning.

It is a remedy almost or entirely certain against the aphis and probably against others.

Persons who try it will be kind enough to make known to Mr. Parmentier their success.

The employment of it has never been injurious to fruits or vegetables. Mr. Parmentier has tasted even cauliflowers, treated with this infusion for the destruction of catterpillars, and never perceived any ill effect on the flavor.

[For the New-York Farmer and Horticultural Repository.]

**ART. 36.**—*Remarks on the Rosa Grevillii. By* Mr. WILLIAM PRINCE, *proprietor of the Linnæan Botanic Garden, Flushing, L. I.*

MR. EDITOR.—I propose to make a few remarks relative to the *Rosa Grevillii* or *Greville Rose.* This species has attracted much notice in different parts of Europe and in this country, being quite a novelty in its general characteristics, and in commenting upon which, I cannot perhaps give a better idea to the read-

er, than by extracting the statements made in other publications. In the 4th number of Loudon's Magazine, page 467, is the following description, given in a letter from a correspondent to the editor.

"You will, no doubt, recollect the shoot I showed you of my Greville Rose, which grew eighteen feet in a few weeks. It is now in bloom, and is the most singular curiosity of all the rose tribe, that has come under my observation; it grows on an E. by N. aspect, on the gable end of my house, covering about 100 feet square, with more than a hundred trusses of bloom. Some of them have more than fifty buds in a cluster, and the whole will average about thirty in a truss, so that the amount of flower buds is little short of 3000. But the most astonishing curiosity, is the variety of colors produced on the buds; at first opening, white, light blush, deeper blush, light red, darker red, and purple, all on the same clusters."

In the report of the Horticultural society of London, for the month of June, 1826, the following remarks are made. "Rosa Grevillii, in a single fasiculus of flowers, are roses of every shade of purple, and from white to the darkest tint; it is one of the handsomest climbing roses."

After these statements, any further description from me is deemed unnecessary, and I will merely remark, that it is the strongest rose in its growth, and the most rapid in the formation of long vigorous shoots, that I have ever seen, and will very speedily cover a large space. This rose may be easily distinguished at first sight by the appearance of its foliage. The leaves are beautifully serrated on the edges, and those on the young shoots, have a pink border running entirely around the leaf, and which, contrasted with the green, gives the leaves a beautiful and delicate appearance. The petiole or leaved stalk, is broad at the base and deeply indented on the sides, so as to form narrow hair-like segments; the upper part where it joins the leaf, is narrow and of the usual size.

I have succeeded during the past year in rearing about 150 young vigorous plants, two thirds of which have already been disseminated throughout the union, and near 500 more are in a progressive state, and will be fit for transplanting the ensuing season.

Yours, most respectfully,

*Feb.* 18, 1828. WILLIAM PRINCE.

[For the New-York Farmer and Horticultural Repository.]

**ART. 37.**—*Economical method of preserving Posts. By* A. PARMENTIER, *proprietor of the Horticultural Botanic Garden, Brooklyn, N. Y.*

In Europe they make use of an easy and cheap method of preserving wood, for posts. Every one has observed that posts all decay first in that part which is near the surface of the ground. And the consequences are, that when used for fences or other purposes, great expense and labor are to be incurred in preparing or building anew. But the application of a band of thin lead, about the breadth of four inches, the middle part of which even with the surface of the ground, will add much to the duration of the wood.

The lead of proper thickness cannot be had at the stores; that which is found in tea boxes will answer well if doubled or trebled.

Posts of chesnut, pine, and other cheap and common wood, protected by this means, will equal the yellow locust, which is every year increasing in price.

**ART. 38.**—*On the culture of Peach Trees. By* WILLIAM WILSON, *of New-York, read before the Horticultural Society in* 1824.

Several considerations seem to render any correct information respecting the successful cultivation of the Peach Tree, a subject of considerable importance. It is a fruit universally admired, and its cultivation here for many years past has generally been very unsuccessful. Various opinions have been entertained as to the deleterious causes which have so universally obstructed the successful culture of this delightful fruit; and it would be no difficult task to exhibit the erroneous doctrines so long and so widely propagated, respecting the sadly deteriorated state of our peach trees. That melancholy term "the yellows," and the still more frightful bug-bear of "the maggot," with all the evils arising therefrom, have been multiplied into insurmountable obstacles; and the misguided cultivators, directing their sole attention to the discovery of some particular application for the counteracting of these evils, appear to have altogether overlooked the true and radical cause of the failure of the peach tree. This, like every other vegetable, is liable to disease from the inclemency of seasons, from the attacks of insects, and other external violence, from the want of proper nutriment, and lastly, by that natural tendency to decay, by which the unalterable laws of nature have wisely limited the ordinary period of duration of every thing that lives. The peach tree is of a comparatively short duration, to the pear or apple; and although by budding or grafting any particular sort, may be increased to any amount, yet, as both these operations only extend a continuation of a part of the original plant, its time of duration must terminate; and we have no hesitation in giving it as our opinion, that the late failure in our peach orchards, has been more owing to causes arising from the natural termination of the duration of the sorts so long propagated, than from any extraordinary malignancy of disease. If this opinion be correct, there is little wonder to see the long languishing state of our

peach orchards, where, instead of adopting that careful and improved mode of culture calculated to introduce a renovation of the plants, the chief attention has been directed to the cure of evils from which no permanent advantage can ever arise. That our opinion respecting the efficacy of an improved mode of cultivation is correct, will appear from the facts, that where this has been attended to properly, no material injury has been experienced from these diseases, otherwise so widely complained of. It is more than twenty years since I planted out an orchard of peach trees in Greenfield, in Connecticut, for a gentleman in whose employ I then was, and which has never failed, in a single year since, of producing an abundant supply of the finest and most delicious fruit. This gentleman is a most accurate observer, and well skilled in Horticultural subjects. His young trees have been reared from seed of the finest of his fruit, and inoculated from trees in a healthy flourishing state; his orchard is regularly manured, and constantly retained in a high state of cultivation. In the spring of the year 1807, I planted out a peach orchard of about one acre upon this island, within three miles of the City-Hall, and during the nine succeeding years, viz. till the year 1816, not more than six trees died out of the whole—two or three of which were not thrifty when I set them out, but owing to the quality of their fruit, I wished to try them; the others were injured by a heavy storm, when loaded with fruit; and in fact, I had more trouble in propping up limbs to support fruit, than in guarding against infected farina, or pursuing maggots. In the year 1816, I commenced the cultivation of about ten acres of land on Greenwich lane, where I have continued the cultivation of the peach with great success, and have at this present moment upon the ground several thousand peach trees, perhaps in no respect inferior to any ever raised here at any former period. I would not be understood to aver, that the cultivation of the peach is a matter of as little indifference at present, as it was thirty years ago. The successful cultivator now, is under the necessity of pursuing a mode of culture calculated to renovate the species, by selecting a new and improved race of plants. This cannot be achieved by chemical plasters, or scientific dissertations on the terrifying name of a worm, which the experience of twenty years ineffectual speculations on these subjects, have sufficiently proved. Many fine new varieties raised from the seed of this fruit, are at present, and have for many years been, under successful cultivation, in this vicinity. Yet, buds taken even from these, and inserted on stocks raised from seed of old defective trees, may be very liable to fail; for, among the fruit of such trees, many of the stones have defective kernels, and although such will often grow, yet they produce a sickly race of plants, which no culture can invigorate, and which the slightest injury destroys. It is therefore as necessary to be careful in selecting good seed to raise the stocks, as to procure buds from good healthy trees. There are also many other particulars which require great care and attention on the part of the cultivator, and which the limits of a single essay would not permit of our treating of, separately. Our main object in the present essay is, from a faithful statement of a long series of actual facts, to endeavor to correct a radical error, which almost every cultivator, and I believe every former writer, has labored under, in endeavoring to discover means of renovating our peach trees by the application of artificial remedies, instead of adopting a more careful and improved mode of cultivation, by which a new, a more healthy, and vigorous race of peach trees, may be once more introduced throughout the truly congenial clime. This, it is true, will require the work of time; yet, if the subject could once be generally understood, a very ordinary degree of care and attention on the part of the cultivator, might effect it in a few years. The great evil exists in the want of a proper degree of care and skill, in introducing and selecting such sorts only as are worthy and proper for our future cultivation. By the establishment of a botanical garden, under the management of experienced men, the greatest benefits to society, in the improvement of this and every other fruit, might be effected. Here a liberal portion of the grounds might be adapted particularly for the introduction and cultivation of every proper and improved variety, worthy of being retained or recommended for general cultivation; and here the most improved mode of cultivation might always be ready for the actual investigation of all such as might be desirous of obtaining such benefits as are always to be derived by men of discernment from such models. The scientific speculator too, might here have a fine opportunity of testing the effects of all his favorite theories, and the public would not be left at a loss to know how far they would be safe in following such rules as his superior sagacity and skill might discover worthy of being recommended. Great mistakes are generally entertained, and much mischief done, by the improper pruning of peach trees; and those unacquainted with the proper method of managing this part of their culture, would derive more benefit by contemplating, for a few moments, the actual form of a few trees properly managed, than reading the written or printed directions of a volume. The state and form of the trees are often so different when obtained from the nurseries, that no particular rule can be laid down that would be applicable to the whole. The great art for securing a proper form for the head of a peach tree, depends upon cutting off the leading or main stem at the desired height the head may be wished to commence at, which should never be more than four feet high—I prefer two or three feet. The selection of four or five limbs, if possible, from the opposite sides of the stem, as near the point as can be

got, and moderately upright positions, should be suffered to form the main stem of the top of the tree; and, as these generally furnish abundance of shoots from all parts as they advance in height, they ought never, in such case, to be shortened. It is seldom that the peach tree requires much pruning after the main branches of the head are thus formed. Wherever the inferior limbs become too close, they should be cut out; and if any supply be any where necessary, some branch, if any be found conveniently situated, may be shortened, so as to throw out a greater supply. There is one particular season which I have always found to succeed better than any other, for cutting the main stem for forming the head of the tree, and that is in April. Just as the buds begin to break, wherever any irregularity of the branches occur, in the growing season they may be regulated by the knife any time; but no pruning ought ever to be performed on these trees at the approach of, or during the winter season. It is not the object of our present undertaking to enter into any particular investigation of these external evils, which have for many years, been generally considered as an unconquerable scourge of the peach tree; nor have we any objections to the man of science developing the results of those profound researches, arising from the pursuits of natural philosophy. Our object has been to prove, by a long series of facts, (which can be well authenticated,) both the erroneousness and absurdity of ascribing the great failures of our peach trees to any malignant cause, but to other natural defects, which an improved mode of cultivation has been actually able to resist, and which, if more universally adopted, would greatly facilitate the complete renovation of this delightful fruit.

[For the New-York Farmer and Horticultural Repository.]

**ART. 39.**—*On the vine called Black Orleans. By* A. Parmentier, *proprietor of the Horticultural Botanic Garden, Brooklyn, L. I. New-York.*

This vine, which is from the north of France, I can particularly recommend for withstanding the rigors of winter. Last year it was in a position and under circumstances that clearly proved its adaptation to this climate. In the spring of 1826, I received three hundred roots of this vine, and as the drought had been extremely severe, I thought it best to set them out in the lowest part of my garden, where all the water collected. In the autumn, before my ground was prepared, there came a very heavy rain which covered my vines to the depth of two feet. Two days after, a frost came and kept the vines in ice for three months. And in proof of the hardiness of this species, and of its capability of being acclimated to this latitude, it received no injury from the frost, and produced grapes, of which I gave some to several gentlemen—in particular to Mr. Le Ray de Chaumont, who is so kind as to patronize my establishment, and to whom I had the pleasure of showing my vine.

After much experience, I have no doubt that this vine may be cultivated with success in the most northern latitude of the United States.

The grapes are not large but sweet and abundant. In France, the red wine from them is very fine and much esteemed.

[For the N. Y. Farmer and Horticultural Repository.]

**ART. 40.**—*On the cultivation of early Peas. By* William Curr, *gardener, of New-York.*

As the least improvement in any art or science is of consequence not only to those engaged in the particular department treated upon, but is of advantage to the whole human family—and as there is perhaps no art can give a more healthy, rational, and useful amusement to man than Horticulture—whatever tends to the promotion of any part of it, cannot be unacceptable to the public.

As I have been very fortunate in the early raising of that excellent vegetable the pea, I flatter myself that these few observations may not be altogether uninteresting to some of your readers. I have for a number of years paid a good deal of attention to having peas early, and have tried a great many methods to attain that end; and I think the method I have adopted has some advantages over the common plan. I have often sown my peas in the month of February, and beginning of March, and I have never lost a pea from frost. Peas ought to be got of the earliest sorts, and if possible without bug holes in them, which although holed, may grow till they will be found to produce more sickly plants than those which are well kept and sound. The peas which I have found to do best with me are the early double blossomed frame peas; I prefer to have them two or three years old, as they bear earlier and do not run so much into vine. An early piece of ground should be selected for this purpose, not too rich, and if possible lying dry. It should be well dug without dung, and made fine with the spade and rake. The drills should be drawn 3 1-2 feet apart, six inches deep, and two inches wide at the bottom, and about one inch of well rotted short dung laid in them, which should be covered with two inches of earth, and the peas sown over them with about six inches of earth, which leaves a small ridge immediately above the peas. In this state they may lie for eight or ten days, the ground may then be raked level to await the coming up of the peas. Should they make their appearance in cold weather, a little litter or straw may be laid along the drills, and taken off whenever the air is free from frost. When the peas are about one inch high, the earth should

be gently stirred with the hoe on each side of the row, and when they are advanced to about three inches in height, a little earth may be drawn up to their stems; if the weather be cold, they may be protected by setting two boards on the edge so that they may meet together over the row. As the peas advance, the earth should be stirred near the rows, and when six inches high, they ought to have sticks set out on each side of the row at the distance of from twelve to eighteen inches apart, taking care not to have the sticks too crouded, yet to have enough of branches near their bottoms, so that the tendrils of the peas may take easy hold. Care should now be taken that the peas keep upright; when they put out six or eight flowers, the leading shoot should be stopped by nipping the top off—this greatly promotes the forming and filling of the pods. Should the weather be dry, it may be requisite to water the rows; this should be done at night, and should be continued every night during the continuance of the drought. Peas thus raised are seldom attacked with the bug, as those depredators are not generally astir so early in the season. For the later crop, the double row is generally used, and answers better than the single, as the double take nearly the same quantity of sticks, and are more shaded from the sun, which is a great advantage when the sun gets high. The ground may likewise be stronger and the sticks longer, but for the earliest peas the small quantity of manure used is quite sufficient to push them forward, without giving too much force to their after growth, or to keep them from flowering, setting, and filling their pods. In the saving of peas for seed, the earliest pods should always be selected, as they are better filled, and the peas from them will produce earlier than those saved from vines which have bore long, and are less subject to be infected by the bug. I am, sir, yours,

Most respectfully,

WILLIAM CURR.

It is with great pleasure that we lay before our readers the following plan for the education of the agricultural population of our country. We deem the subject of very great importance, and recommend it as embracing the highest interest of society.

**ART. 41.**—*Plan for a Fellenberg School, in a letter addressed to Jonathan Roberts, President of the Pennsylvania Agricultural Society, from* ANTHONY MORRIS, ESQ.

WASHINGTON, Dec. 31, 1827.

DEAR SIR,—I am much gratified to find that your opinion of the Fellenberg system of education accords with those which I had expressed, as well as those I had received from other persons distinguished for their judgment, and devoted to the interests of agriculture and science, and to their extension throughout the Union.

To introduce into Pennsylvania, in the first instance, an Agricultural Institute, connected with a general system of scientific and liberal instruction, so extensive as to give, in the country, all the means of education now only attainable in colleges and cities, would be obviously an attempt beyond the resources of individual farmers, and must rely for its success on public opinion, that all powerful instrument in modern times, of effecting every end either of good or evil.

To ascertain, therefore, how far such a system would be sustained by public opinion in Pennsylvania, and generally in the United States, has been my first object. For this purpose my earliest references have been made to the agricultural societies of Pennsylvania, and to those individuals most known for their devotion to the extension of knowledge, and the improvement of our systems of education, especially in the country. Thus far my inquiries have resulted in the most satisfactory evidences of a general desire to improve the moral and intellectual character of our country population, and a conviction that this can only effectually be done by a system of education appropriate to this portion of our fellow citizens. Should further inquiry, by a more extended correspondence, confirm my impressions that public opinion is prepared for this system, a more detailed statement of its character, and the benefits expected from it, will be presented on the return of a gentleman to the United States, who went to Switzerland, and has resided some time at Hoffwyl, with the express object of obtaining all the requisite information, and of whose character and talents we have the most satisfactory references here, as well as the opinion of Mr. Fellenberg himself, of his competency, and preparation for the part intended to be offered to him. I must defer until his return, the statements and estimates to which you allude—he is expected in the spring.

No other fund has been contemplated as essential to the success of the establishment by its friends, than the subscription of responsible names for the requisite number of scholars; which, in the first instance, would be about one hundred, at perhaps two hundred dollars per annum for the school of general instruction. On the faith of these names, and presuming on the advance of one half year's tuition on its commencement, the requisite funds for preparation in buildings, &c., it is believed, might easily be raised in Philadelphia.

One hundred acres of land is supposed adequate to the agricultural department, and, for the exclusive laboring class, the experience of Mr. Fellenberg is, that the results of their labor paid for their education, subsistence and clothing, leaving to each a moderate excess. To this class, and to that which would unite an agricultural to a liberal education, more or less ex-

tensive, according to the means and wishes of the scholars, the immediate benefits to the farming community are most evident, in addition to the general benefit which the extension of the circles of science beyond our cities and colleges would confer on the country.

On a farm prepared for a proper distribution of labor, having its buildings systematically arranged with every view to economy, provided with the due proportion of laborers, whom we will call apprentices, and possessing the requisite capital to conduct the whole system, (which Mr. Fellenberg has reduced to a science,) with the economy, regularity, and industry to which rural labors on such a farm may be subjected, you will readily see results in Pennsylvania, such as the Fellenberg system has realized in Switzerland, and school farms in which science would preside, and industry, intelligence, and happiness, would be the fruits, instead of indolence, idleness, and misery.

Such would be the happy change to the country population of Pennsylvania, should the system take root among us and become the substitute for our road-side schools, which, in general, seem only intended to expose to travellers the rude state of science in our country, and the total want of an appropriate education for its population.

Our moderate farmers and mechanics would find at their doors a liberal and practical system of education prepared for their sons, and the laboring classes would be simultaneously employed and educated, as in the system referred to, the hours of relaxation from bodily labor, are devoted to intellectual improvement.

Thus, labor is made to pay for education, and education to be the reward of labor; and both uniting in the same person to form a character as different from that of the uninstructed, undisciplined, and often intemperate clown, as the free, industrious, and intelligent farmer, mechanic, and laborer of a republic ought to be, from the dependent, degraded, and ignorant slave.

We may in vain look for reforms from ignorance and intemperance in any other source than a good education, of which, perhaps, the best parts are, the early formation of good habits, the regular presence of good examples, the sure foundations of Christian doctrine, and the constant guards of a vigilant discipline; all these essential ingredients seem more easily united in the country than in cities or colleges, and I have never seen them so efficiently united, as on the farm of the truly illustrious Fellenberg; hence my anxiety to have his system received and naturalized among us, and not only because it would be a public blessing, but because I wish to see such a system prepared for that portion of my family which remains to be educated. You must not suppose that I aspire to the character of a reformer; I only claim the merit of endeavoring to introduce into our own country, and into our own state, a system of education, which I have seen successfully established in Switzerland, after an experience of near twenty years, during which time its operations and results have received the sanction of many of the most eminent scientific, literary, and practical useful men in Europe. Among these I will now only refer you to the late eminent Professor Pictel, and his brother Charles Pictel, of Geneva, the Count Capo d'Istria, who visited the Institute at Hoffwyl, by order of the late Emperor Alexander, the late hon. Mr. Horner, Mr. Brougham, and Mr. Jeffries; the commissioners appointed by the Diet of the cantons of Switzerland, and to their report.

Such are the men who have visited, approved, and recommended the Hoffwyl Institution to their respective governments.

It would probably be a more arduous task to procure from the legislature of Pennsylvania the public patronage it so justly merits, than to establish an institution by individual efforts, and thus to anticipate legislation. We have seen extensive military schools rise up and flourish among us, by the efforts only of individuals, and attain celebrity in the objects of their institutions, without, perhaps, an adaptation to our national character and interests as universal as agriculture, and civil education.

Individual effort seems, indeed, a safe and sure foundation for this system, and less liable to delay and defeat than legislation. The system has flourished in Switzerland, not only without the support of the government, but in opposition to the aristocratic features of the constitution of the Canton of Bern, because its principles are in accord with the spirit of the age, and extend the blessings of education to the country population.

To this great class in Pennsylvania, the least attention has been paid. Human labor on our farms has been left almost to its own undisciplined operations. No science enlightens it; no system regulates it: it is not accompanied in the field by economy, nor by temperance, nor rewarded at the fire side of the peasant by content and competence. A day of undisciplined drudgery, stimulated in the field by whiskey, is often succeeded in the cabin of the cottager, by a night passed in the riot of intemperance, or the stupor of intoxication. A week of drunkenness may be purchased by a little more than a day of labor, and as long as ignorance shall be the inheritance of the laborer, intemperance will be his companion, and his consolation, against that listlessness and languor for which the resources of science are the only substitutes.

Should we conceal the prevalence of ignorance and intemperance among us, we should never succeed in removing them. It may be too late to hope for reformation or improvement in those farmers and laborers, who, having began their career in life without science or system, must expect to finish it without profit and without pleasure. But it can never be too early to lay

a new foundation for the hopes and the prospects of the rising generation, enlightened by all the discoveries of the present day, and encouraged by the successful efforts and examples of such patriots as Fellenberg, who have never sought for place beyond the farms cultivated by their fathers; nor for power, but over the passions and prejudices of their fellow creatures, and who, leaving to others the fields of political and party warfare, (in which numbers will never be wanting,) have devoted their lives to the moral and intellectual advancement of man.

An obvious defect in our national character is thought to originate from the inadequate portion of time which is generally devoted to the acquisition of knowledge, and particularly of elementary and classical knowledge, as the best foundation for every other; and from the miscellaneous and superficial education which a great number of the American youth receive, being neither adapted particularly to agricultural, professional, commercial, or mechanical destinations in life, but leaving the unfortunate subject of such a system to be guided in his after pursuits, more by the false pride of parents, and other incidental causes, than by any fixed and permanent principles. A change of system in this respect, would probably do much to promote a change from an injurious and speculative versatility of character, to a systematic permanency in the pursuit of those objects only, to which an early system of education had been directed.

Our prejudices lead us to associate all ideas of schools and scholars, with houses, and desks, and benches; while the field itself, the great scene of the farmer and laborer's operations, is seldom suggested as the best school for his practical instruction.

The field lessons and labors, in practical agriculture, at Hoffwyl, are among the most animating and instructive exercises of man. It is, perhaps, there only, that science and labor are seen hand in hand, supporting and assisting each other; and that a system of education, having its foundation in the pure principles of Christianity, and separated from all sectarian controversy, is made subservient to the improvement, moral, intellectual and practical, of man in every grade of the human family. Is not systematic instruction in his occupation as essential to a farmer, a field laborer, and a gardener, as to a carpenter or a mason? Can system be obviously more necessary in any department of life than in our agricultural practices? And can any system be selected from the distant and diversified practices of our best farmers?—a comparison between which and their results can never be fairly made. It is only where a variety of culture can be exhibited at one time, in one place, and on scientific principles, that comparisons can be made, or just conclusions formed.

The principle of pattern farms, at the expense of the state, so long solicited in vain from our legislature by the politicians of former days, it would perhaps be useless at this moment to attempt to revive. You will see in this project a substitute for these, combining instruction with exhibition. To have some ground to go upon, I have selected Bolton farm, near Bristol, in Pennsylvania, as the locality for the first agricultural Institute. It is an estate of my son, Mr. James Pemberton Morris, who puts such parts of it as I may select at my disposition, uniting in my wishes for the education of his children in such an institution. The farm consists of near 500 acres, is situated in a healthy country, on the verge of the manor of Pennsborough, once the residence of the founder of Pennsylvania, and selected by him for its fertility, and favorable position as to intercourse by land and water; to which natural facilities will soon be added those of the Delaware canal, located near it, and communicating directly with Philadelphia, at the distance of twenty miles from Bolton.

Next to the farm, it is desirable to find the Fellenberg. This is the most difficult part, but will be surmounted if Mr. Woodbridge, who has received practical instructions at Hoffwyl, will assume that character. Then are to be found the funds, which should come, I think, from the scholars, on the same system that has elevated to so merited an eminence among our scientific institutions, the Medical School of Philadelphia; no stated salary being annexed to each professor's chair, but the whole emolument arising out of the instruction from each, would be apportioned to its particular professor and assistant.

Such, sir, are the outlines of a plan for the introduction into the United States of a system of education believed to be adapted to the character of our country, and especially applicable to those interests and employments, in which the greatest numbers are engaged, and to which, heretofore, the least instruction has been extended.

My immediate object in this communication, is to obtain the expression of your opinion on the subject of it, which I have no other right to solicit, than that which is founded on a belief that it merits, and will receive, particular respect and attention from those classes, especially, whom it more immediately concerns. It is so far circular, as to be similar to those addressed to Mr. Fellenberg, of Hoffwyl, to Mr. Madison, to Judge Peters, the President of the Philadelphia Agricultural Society; from all of whom the most strongly expressed and favorable opinions have been received, and are in the hands of the chairman of the Committee on Agriculture in the House of Representatives.

I am, sir, most respectfully,
Your obedient servant, &c.
ANTHONY MORRIS.

To Jona. Roberts, Esq.
*President of the Pennsylvania Agricultural Society.*

**ART. 42.**—*Origin of the Worm so destructive to peach trees, and the method for their preservation. By* FELIX PASCALIS, *M. D., Honorary member of the New-York Horticultural Society.*

MR. EDITOR.—In addition to the views and remedies proposed in your last number, by that excellent and practical horticulturist, Mr. Parmentier, respecting the diseases and preservation of peach trees, I beg leave to offer a few hints which were suggested to me many years ago, after having paid to the subject much attention purposely to save several peach trees in my garden, in Philadelphia. They were not planted by me, but being of an excellent quality, and one very large, (the *Pavie de Pompone*, three peaches of which would always fill a large plate,) I resolved to ascertain, if possible, whence these destructive worms could originate. I must say, that I perchance discovered an encouraging indication, by opening with a penknife several of those dried gummy drops, which may always be seen on the bark of many branches during summer and fall. These proceed from an imperceptible wound inflicted on the tender cuticle of the bark, which is a texture composed of transversal ligneous fibres; and soon after the gum-sap oozes out it dries and remains transparent. In the center of these drops I frequently found the cadaveric remains of an insect or worm, sometimes hardly visible. I therefore concluded to pay great attention every summer day to my trees, hoping to discover some parent insect, which caused the mischief. I was successful, on a fine July day; under a shining hot sun, I observed a large black fly, of the size of a wasp, extremely restless, and flying at my approach from branch to branch, and from tree to tree. It sat but a few seconds on the outside of the bark, never on the leaves; and shortly afterwards, as if disturbed, it disappeared. I had now encouragement for increased attention as far as my time would permit. During the season and succeeding years I often saw this *Ichneumon*—it is the fly that deposits an egg by compressing the lower part of her body two or three times. She first perforates the bark with a sharp sting, and with this or another organ she lodges an egg, and flies immediately on another spot, being particularly addicted to the trunk only, or to the main branches.

This first point being settled, and most credibly pointing out the parent of the worm, the next is to account for two material circumstances: why the eggs thus lodged at the trunk and branches do never produce any worm upon them? and why the worms are found only at the lowest part of the trunk, even under ground, at the origin of the roots?

It is the nature of the peach tree to have an abundant gummy liquid circulating through the bark, and that it should ooze out by the least aperture made on the external cuticle. The egg therefore which has been left in that aperture by the parent fly, is invariably pushed out by the oozing fluid, just as it is or has been hatched; and although wrapped up in the very substance which is its food, the same being accumulated outside and exposed to the air, it becomes dry, hard, compact, and compresses the worm to death, so that nothing is seen of it afterwards except its skin remaining in the gum, which is collected in drops. A far different result obtains in the lower part of the trunk from which the gum is more abundant and is not so soon dried up, owing to the moisture of the ground; there the worm being hatched has time to live and grow strong enough, and can creep back to the moist and fresh side, and can finally use its mouth and teeth to find its way in the more tender parts below, permanently hidden under the bark where it stops, always directing its progress circularly, and as extensively as its existence may require in this abode. Now let us dwell for a moment to learn how to find out the insect and to destroy it; recollecting, however, that if we succeed in season so to do, it is only when and after it has caused some very great and almost irreparable ravages.

The appearance of a peach tree evidently bespeaks the evil under which it is laboring, by the emptiness of its bushy parts, dry or dead like branches, by the early fall of its blossoms, and by the yellowness of leaves. Then denudate the trunk a few inches below the ground, as far as the surface of the roots, until you find some mucilaginous brown and liquid matter mixed with something like saw dust; and holding some kind of strong curved wire, probe all the woody surfaces until you penetrate into some aperture from which that jelly matter has flown; the way track or cavity which the worm has opened will easily be found, especially if you break the bark with it through. Thus you will lay all this channel or fistula open, unless it is too late and the worm has left it, as it must transform itself in the ground into a lava, which at an early period of the spring will become a crysalid and then an *Ichneumon Nemoralis*. This insect of the fourth class, *Tetraptera*, much like the *wasp Ichneumon* or *Tipula*, of Reaumur, is black, but bears yellow stripes or spots on its body, and is particularly known in its habits to proceed from larvæ of grubs in the earth. The life or existence of it in the shape of a worm cannot therefore be longer than about six months; after which you would in vain look for it in its most deep recesses. It is white, about an inch long, its rings are numerous, narrow and hard, has a small black head, but no legs, and always shows itself in a ring kind of contraction. The search for, and the destruction of these worms; should always be made early before winter; but the most effectual mode of preservation is simple and obvious. It would be that of keeping during summer the whole trunk carefully covered by a matted sheaf of straw, at least three feet, extending some way under the

ground, through which the fly never could reach the surface of the tree. These cheap coverings need not to be kept longer than two or three months, and can be preserved for another year.

**ART. 43.**—*Letter from* W. J. Hooker, *Regius Professor of Botany in the University of Glasgow, to Dr. S. L. Mitchill, Dated Aug.* 29, 1827.

Dear Sir—I should not thus long delayed writing to you, and thanking you as I do now very cordially, for the tubers of the potatoe, &c. were it not that I was anxious to wait, until the potatoe had produced its flowers, that I might give you my opinion upon it, as far as regards its *species*. The blossoms have now been produced. The plant is drawn, engraved, and the description printed; and it will be published next month in the Botanical Magazine. You will judge from this that I consider it to be a plant of no common interest. I found that I had a native specimen of it, in the herbarium gathered by *Commerson*; and upon comparing your plants with a figure in *Ruiz* and *Pavon*, I had no hesitation in considering it to be the Solanum montanum of these authors. This name therefore, from priority, I am under the necessity of adopting, and, at the same time, I have preserved your name among the synonyms.

The anthers you will observe, do not, as in the true Solana, open by pores in the extremity; but by longitudinal fissures as in most anthers. Hence, although in all other particulars it accords with Solanum, the plant has been separated from that genus, and called *Witheringia*; and this species is the Witheringia montana of *Sprengel's* new work. I have ordered a plate and description to be prepared for you, which I shall have the pleasure of sending by the first opportunity.

WM. JACKSON HOOKER.

The description, which was received on the 20th Feb. 1828, is as follows:

Witheringia montana. Mountain Witheringia, or St. Lorenzo Potatoe.

*Class and Order.*

Pentandria Monogynia.

(Nat. Ord.—Solanaceæ.)

*Generic Character.*

*Cal.* urceolatus 4—5-fidus. *Cor.* campanulato-rotata, tubo gibboso. *Antheræ* longitudinaliter dehiscentes. *Bacca* 2-locularis, calyce persistente suffulta. *Spr.*

*Specific Character and Synonyms.*

Witheringia *montana*; herbacea, hispido-pilosa, foliis cordato-ovatis obtusis sinuato-repandis, petiolis alatis basi subauriculatis, racemis axillaribus terminalibusque paucifloris, radice tuberosa.

Witheringia montana. *Dunal. Spreng. Syst. Veget. v.* 1. *p.* 676.

Solanum montanum. *Linn. Sp. Pl. p.* 514. *Ruiz et Pav. Fl. Peruv. v.* 2. *p.* 33. *t.* 160. *f.* 6. *Willd. Sp. Pl. v.* 1. *p.* 1034. *Pers. Syn. Pl. v.* 1. *p.* 226.

Solanum Laurentii. *Mitchill in Addr. to Hort. Soc. of N. York.*

Solanum *tuberosum minus*; atriplicis folio, vulgo *Papa* montana. *Feuil. Obs. v.* 3. *p.* 62. *t.* 46.

Descr. *Root* a roundish or rounded, oblong, thick, fleshy *tuber*, about the size of a chesnut, and very similar to those of our common Potatoe, but bearing a greater quantity of fibrous radicles. *Stems* three or four, from the same root, six inches to a foot in height, decumbent at the base, rounded, with a few obscure angles, and hispid (less so in the lower part,) with numerous pellucid, white, succulent, short hairs, which point upwards. *Leaves* few, two or three of them radical, two or three inches long, cordato-ovato, obtuse, petiolate, sinuato-lobatæ at the margin, strongly nerved, the nerves prominent on the under side, piloso-hispid: *petioles* about as long as the leaf; those of the stem distinctly winged at the margin, the wings terminating in auricles at the base. *Racemes* almost panicled, few-flowered, terminal, and, according to Ruiz and Pavon, lateral, opposite to the leaves. *Peduncles* long, hispid; *pedicels* also long. *Calyx* hispid, suburceolate, green, cut into five linear-oblong, obtuse, spreading segments. *Corolla* white, rotate, scarcely, except before expansion, at all campanulate, five-lobed, lobes acute, with five greenish rays, and somewhat waved. *Stamens* five, inserted at the base of the corolla, connivent. *Filaments* short, greenish: *Anthers* oblong, two-celled, cells opening longitudinally, deep yellow. *Pistil: Germen* roundish, small, green: *Style* longer than the *Stamens*, deflexed: *Stigma* oblongo-capitate, somewhat glandular, yellow-green.

Our knowledge of this interesting species of Witheringia or Potatoe in a living state, is due to Dr. Samuel L. Mitchill, of New-York, a gentleman who has been unweariedly employed in the promotion of science throughout North America, and who very obligingly communicated some tubers to me in the month of February, 1827. They were gathered on the top of the island of San Lorenzo, in Callao Bay. These were immediately planted in a pot and placed in a cool part of the stove of the Botanic Garden; and in six weeks one of them produced the flowering stem here figured. It agrees so well with a specimen of Solanum *montanum* in my Herbarium, from Lima, and also with the figure in Ruiz and Pavon, that I cannot doubt its being the same, or, I would gladly have adopted the name under which it is published in the excellent address above referred to, by Dr. Mitchill, who has laudably distributed it to various countries, in the hopes of its being employed as the common Potatoe. Commodore Isaac Hull, says, that

when boiled, the tubers are yellow, and of a good flavor. Feuillee has observed, that the Indians employ them very much in their soups and ragouts, and Ruiz and Pavon say, that they are excellent for fattening swine. In all probability, therefore, especially, seeing that the plant is a native of elevated and probably temperate situations about Lima and Chancay, it may be cultivated as the common Potatoe, and become an useful culinary vegetable. With the protection of a greenhouse, it may be easily raised, and is certainly an ornamental plant. The flowers probably vary much in color. Ruiz and Pavon describe them as blue, whilst Feuillee says they are rose-colored. Ours are white. The vernacular name is *Papas de Lomas* and *Papa montana*.

**ART. 44.**—*Description of* Richard Wilcox's *Calorimeter for preserving butter cool and fresh in carrying it to market. See plate 1st, fig. 2, page 26, of our first number.*

This figure presents a perspective view of a cask or hogshead, with the apparatus for preserving the butter, exhibited as in a transparent medium by faint dotted lines.

A. The lower part of the cask containing an ordinary bottom, perforated with small holes, or not made perfectly water tight.

B. A linen cloth or any similar non-conductor of heat, laid over the bottom.

C. A large tin tub having in the upper part a solid top of the same metal. The first stratum of butter is placed upon an isolated stool of about four inches high from the bottom of the cask, and covered with the first tub, C.

The remaining tubs D and E are formed similar to the first. The method of putting the butter in, is simply as follows:—Place the linen cloth in the bottom of the cask; put into the cask about four inches of ice next to the stool; place the butter on the top and cover it with the metal tub C, inverted, and then lay another stratum of butter as thick as convenient, and cover it with the second tub D, which is made to fit well over the outside of the other. In the same manner the tub D and others may be put on until the cask is full. The interior of the large cask to be covered with a linen cloth, a small quantity of straw or any other suitable non-conductor, and the remaining space between the straw and tubs is to be filled with ice, and put also over the top of the upper tin vessel. The cover C then to be put tightly on.

By this simple means the butter is entirely surrounded with ice; without either the possibility of the ice or water coming in contact with the butter, as in most of the present methods, by which the butter is not only imperfectly preserved, but often rendered rancid by the ice water. By this plan, however, as the ice melts the water drops down and filters through the cloth and the bottom of the cask.

As the tin is a good conductor of heat, the coloric in the butter is soon absorbed, while the external heat is prevented from entering by the surrounding stratum of ice. The cask itself being a good non-conductor of heat, by placing the whole apparatus in the hole of a vessel or other shady cool place, the butter will be kept cool and in a clean state for a considerable time.

**ART. 45.**—*Summary of Intelligence—including notices of new publications.*

Vermont Rice.—This article, commonly called *groats*, by foreigners, is said to be an excellent substitute for southern rice. It is nothing more than the kernel of the common oats, dried and hulled. When pulverized or ground, it is kept by the druggists and sold as a medicine. For cakes, puddings, and bread, it is a very excellent and wholesome food.

Southern Agriculturist.—We have received the first number of a monthly periodical with this title, published at Charleston. It is in the octavo form, containing 50 pages, at 5 dollars in advance. As its title denotes, it is devoted more particularly to agriculture, as adapted to the southern section of our country. The great extent of the United States, and the variety of our climate and soil, render a work of this description necessary.

Annals of the Sciences.—Samuel L. Mitchill has the pleasure of informing the editor of the New-York Farmer, that he has lately received from Havana, five numbers of the periodical work published in Cuba, by D. Raman de la Sagra, Professor of Botany in the large and public garden near that city. It is entitled *Annals of the Sciences, Agriculture, Commerce, and the Arts.* A number consisting of about thirty pages, comes out once a month in Spanish. It is under the protection of the Intendancy of Havana, and besides general views of the several subjects embraced in the plan, will have a particular reference to the application of industry and improvement in Cuba.

He can at present only give you a brief notice of this work. It would require more time than he can now spare to make a review or even an analysis of it. It appears to be highly respectable, and to sustain the character already acquired by the learned and industrious author, in his preceding publications. A few leading articles however, may be mentioned by their titles, such as

1. Several dissertations on the sugar-cane.
2. Sketches of the author's botanical correspondence with distinguished men in Paris, Geneva, Moscow, and Munich.

3. Several papers on the cultivation of flowers.
4. The history of coffee.
5. A series of meteorological observations.
6. Some account of the botanical garden.
7. Importance of studying the gums and resins of Cuba.

It is very honorable to the administration of that city and island, that such an important garden, with such an able professor, and correspondence, &c., should be supported there. I hope we shall, before much time elapses, find imitators and supporters here.

*New-York, Feb.* 26, 1828.

The Dundee Horticultural Society,—held their Annual Festival Meeting on the 12th of September when a rich display of flowers, fruits, and vegetables were brought forward in competition, and prizes awarded to upwards of twenty individuals for nearly forty different articles; to Mrs. Thain for the best white currant wine, Mrs. Guthrie for the best black current ditto, and Mrs. Turnbull for the best wine from a combination of fruits.

The Hall was open to the public at half past one when an admiring throng, comprising the rank and beauty of the town and neighborhood, honored the Society by their presence. Seventy six gentlemen sat down to dinner, and afterwards spent the evening in the most convivial and agreeable manner.—*Dundee Courier, Sept.* 14.

Rural Beauty.—Look under that broad beach tree. I sat down, when I was last this way a fishing. And the birds in the adjoining grove seemed to have a friendly contention with an echo, whose dead voice seemed to live in a hollow tree near to the brow of that primrose hill. There I sat viewing the silver streams glide silently towards their centre, the tempestuous sea; yet sometimes opposed by rugged roots and pebble stones, which broke their waves, and turned them into foam. And sometimes I beguiled time by viewing the harmless lambs; some leaping securely in the cool shade, whilst others sported themselves in the cheerful sun; and saw others craving comfort from the swollen udders of their bleating dams. As I thus sat, these and other sights had so possessed my soul with content, that I thought, as the poet has happily expressed it,

"I was for that time lifted above earth;
"And possessed joys not promised in my birth."

*Isaac Walton.*

The roots of a black Mulberry Tree, which had lain dormant in the ground for twenty-four years, are said at the end of that period to have sent up shoots.—(*Ann. des Scienc. Nat.*)

Palo de Vaca, or Cow Tree of the Caraccas.—A phial of the milk of this tree, together with a few leaves and a portion of the root, has been sent to A. B. Lambert, Esq. by Mr. David Lockhart, curator of the botanic garden in Trinidad. The milk is obtained by making a spiral incision into the bark of a tree which attains very large dimensions. The one from which Mr. Lockhart obtained the milk was one hundred feet from the root to the first branches, and stood about fifty miles east of La Guayra, in the Caraccas. Mr. Lockhart drank a pint of the milk, and found it taste like cream, with an agreeable smell. He procured some young trees, and is now endeavoring to increase them in Trinidad. Mr. Don found the milk sent to Mr. Lambert to have the appearance of sour cream, and to be by no means disagreeable. The tree he considers as evidently related either to Ficus or Brosimum.

Large Currants.—In the garden of the Rev. H. Bolton, I lately gathered several black currants, which measured in girth lengthwise, two inches and one sixth, and in girth round two inches, and weighed forty-five grains each. The same tree produced many of equal size.—*Thos. Williams, gardener, Ratcliffe Lodge, near Nottingham. Sept.* 18.

Large Cauliflowers.—I have lately also cut, in the same garden, several cauliflowers, measuring, when stript of their green leaves, three feet three inches round, of fine flavor for the table, and remarkably handsome.—*Id.*

Chemical relationship of Plants.—A writer in the *Isis* has undertaken to prove that there exists a chemical relation between, 1st, the different parts of a plant; 2d, the different species of a genus; and 3d, the different genera of the tribe. In proof, he refers to certain experiments from which tannin was found in every part of the oak, the narcotic principle in every part of the Belladonna; the prussic acid in the kernels of all the species of the genus Prunus, and a yellow coloring more or less in the bark of the roots of all the species of the genus Galium. This writer, Mr. Rudge, found one common principle in semi-flosculous plants, and another in the Umbelliferæ. Inquiries of this sort will tend materially to assist the study of natural classification.—*Eng. paper.*

Horn Piths.—*Sir*—One of your correspondents asks if horn piths are a manure? I answer, *they are*, and an excellent one, too, for wheat. Within two years, I have used nearly twenty loads, which I procured from the comb-makers. Attached to them are the roots of the horn, and some skin and hair, all of which induce fertility. My practice is to scatter them over the ground, and plough them under. Applied this way, they are some time decomposing. They would be better for the first crop if pulverized or broken, but they fertilize much longer when left whole. I think they are worth four times their bulk of manure from the yard. In addition to these, I use the comb-maker's horn shavings, which I think are superior to any other

application ; and I prefer them at eight cents the bushel, to stable manure at twenty-five cents the two horse load, the transportation of both being two miles and a half.—*N. E. Farmer.* J. BUEL.

*Albany, Feb.* 19, 1828.

A FARM IN CHILI.—An American in Chili describes an estate owned by Don Juan Ovalla, about 30 miles from Valparaiso ; it is 13 leagues square, (about as extensive as the old county of Hampshire.) Ovalla has upwards of 10,000 head of cattle and an incredible number of horses, which run wild 11 months in the year. Once in a year they are all brought together, branded, such as are wanted taken out, and the rest turned adrift. The branding of one of these wild cattle is performed in two minutes. One man throws a lasso over his head, another has him fast by the hind legs, the animal is cast, and the brand applied.—*Hamp. Gaz.*

APPROACH OF THE VEGETABLE TO MINERAL KINGDOM.—The algæ and the mosses, are nearly altogether incombustible, as the byssus *asbestos*, which, on being thrown into the fire, instead of burning, is converted into glass ; and the fontinalis *antipyretica*, a plant indigenous to the Highlands, but more frequent in Scandinavia, where from its difficulty of combustion it is used by the poor as a lining for their chimneys to prevent them from catching fire.

TO RESTORE THE GERMINATING POWER OF SEEDS.—The fact deserves to be extensively known, however torpid a seed may be, and destitute of all power to vegetate in any other substance, if steeped in a diluted solution of oxygenated muriatic acid, at a temperature of 46° or 48° of Fahrenheit, provided it still possesses its principle of vitality it will germinate in a few hours. And if, after this, it be planted, as it ought to be, in its appropriate soil, it will grow with as much speed and vigor as if it had evinced no torpitude whatever.—*Good's Book of Nature.*

LOVE OR MATRIMONIAL UNION AMONG THE VEGETABLE TRIBES.—Perhaps one of the most extraordinary instances of this kind we are acquainted with exists in the valisneria *spiralis*, an aquatic and diœcous plant, or one belonging to that class in which the male and female are instinct individuals. The male has a long spiral ste by which its flower is enabled at all times to adapt itself to the surface of the water, from the bottom of which the plant shoots forth, and to float in the middle of tide-streams of almost every variation of ascent. The stem of the female is straight, and much shorter ; and is hence only found in shallow waters, or on shores, where the tide exerts but little influence.—Thus differently formed and remotely situated, how is that union to take place, without which there could be no increment, and the valisneria would be blotted out of the book of vegetable life. The whole process is wonderful ; a part of it is obvious, but the rest is concealed. As soon as the male flower is become perfected, the spiral stem dries away, and the flower separates itself from it, and sails gallantly over the water in pursuit of the female, for the most part driven, indeed, by a current of wind or of the stream ; yet as soon as it arrives within a certain range of the female, it obeys a new influence, and is attracted towards it in various instances, even in opposition to wind and tide, the powers that have hitherto directed it. What, now, is this stupendous influence that thus operates at a distance, and gives to the male flower a new direction ? It may possibly be a peculiar kind of odor or aroma ; and perhaps this is the most philosophical way of accounting for the fact : but however philosophical, it is altogether hypothetical, for we are incapable of ascertaining, and know nothing of the existence of any such exhalation ; and could we detect it, we should be still totally ignorant of its mode of operation.—*Ib.*

EFFECTS OF VEGETABLES ON THE ATMOSPHERE.—Every chemist must be aware that a large quantity of *carburetted hydrogen gas* is perpetually evolved at the surface of the earth ; he must also know that this gas is fatal to animal life. I could adduce a melancholy instance of a gentleman who inhaled it by mistake, and died almost immediately in consequence of it. How, then, has the all-wise Artificer of the world contrived to protect its inhabitants from the baneful influence of that immense quantity with which the atmosphere is perpetually contaminated ? The means are as simple as they are important. Vegetables are so constituted that carbon and hydrogen are the necessary food for plants, and conduce to the support of vegetable life : their vegetating organs seize the carbonic acid gas which comes within their reach, and while they appropriate the *carbon* to themselves, the *oxygen* is thrown off to renovate the atmosphere by its union with the nitrogen rejected by animal respiration. As all vegetables are in want both of carbon and hydrogen, there can be little doubt but that by their means the atmosphere is divested of carburetted hydrogen gas also.—Thus, what is noxious to man is rendered beneficial to vegetables ; and the oxygen which the vegetables are not in want of, is separated by them in its utmost purity for the use of man. The wisdom, the simplicity, and the beneficence of this arrangement are so striking, and address us with so much effect, that the mind of the reader may be left to its own reflections.—*Chemical Catechism.*

☞ A continuation of the History of the New-York Horticultural Society, with other contributions, will be inserted in the next number.

A list of Agents not having been completed, they will be given in the number for March.

ERRATUM.—In Art. 26, page 2 , of the last number, omit " strawberry" after " box."